



*Hominy WFU 2003 C-T Ashton/Island Park RD*

# CARIBOU-TARGHEE NATIONAL FOREST WILDLAND FIRE USE GUIDEBOOK

UNITED STATES DEPARTMENT OF AGRICULTURE  
INTERMOUNTAIN REGION

2005



# TABLE OF CONTENTS

## *Introduction*

- Abstract
- Revision Process
- Authority
- Fire Use Objectives

## **AREA DESCRIPTION**

- Vicinity Map
- Subsection Descriptions
- Subsections and Prescriptions
- Management Prescription Maps/Tables
- Grizzly Bear Recovery Zone/Map
- Aquatic Influence Zones
- Grazing Allotments
- Soils/Map
- Research Natural Areas
- Timber Management
- Smoke and Air Quality
- Fuel Treatments
- Fire History
- Fire Regimes

## **PROTECTION CONSIDERATIONS**

- Public Safety
- Specific Protection Considerations
- Outfitter Campsites
- Heritage Resources
- Site Evaluation Worksheets

## **IMPLEMENTATION**

- Required Skills and Qualifications
- Wildland Fire Suppression
- Minimum Impact Management Tactics
- Wildland Fire Situation Analysis
- Interagency and Intraagency Coordination
- Wildland Fire Use Contact List
- Inform and Involve Plan
- Monitoring Evaluation and Documentation
- General Funding Requirements

--Continued next page

## **STAGES I-III/PERIODIC FIRE ASSESSMENT**

- Stage I Analysis
- Fire Management Prescriptions
- Risk Zone Maps
- Historic Fire Weather Charts
- Periodic Fire Assessment
- Stage II
- Stage III
- MMA Determination

## **APPENDIXES**

- Appendix A Landtype Associations
- Appendix B RNA Fire Direction
- Appendix C GYA Coordination Guide
- Appendix D LRMP clarification letters
- Appendix E Implementation Procedures Reference Guide
- References
- Glossary

## Abstract

Fire has been one of the primary natural forces that have shaped the overall composition, distribution, and arrangement of vegetation in the subsections described in this plan. During the last century fire has not been allowed to function in its natural role and has instead primarily been suppressed in these areas. The benefits of naturally occurring wildland fire are recognized and the Caribou-Targhee Wildland Fire Use Guidebook is intended to serve as guide to successfully navigate the authority and responsibility required to manage natural ignitions in the geographical areas described herein. These areas include the Jedediah Smith and Winegar Hole Wildernesses as well as non-wilderness lands. The guidebook is a compilation of established National, Regional and Forest direction regarding Wildland Fire Use. This is not a decision document, rather an implementation guide for direction established in the 1997 Targhee Revised Forest Plan. The guidebook also addresses requirements and procedure required by the Greater Yellowstone Coordinating Group (GYACC) and replaces the 1997 Jedediah Smith Wilderness Fire Management Plan. The Guidebook is intended as a "living document" and will be summarily updated as policy changes and/or additional subsections are evaluated



*The earth, born in fire, baptized by lightning, since before life's beginning  
has been and is a fire planet.*

E.V. Komarek

## REVISIONS

The Caribou-Targhee Wildland Fire Use Guidebook was designed and intended as a modular document to be updated as additional subsections are evaluated for fire use suitability. These revisions/additions are to be approved by the Forest Supervisor and documented on this page. Include a brief discussion describing the revision, author, and date approved. Revisions pertaining to policy will not require Forest Supervisor signature but will be recorded in the revision description. One copy of the guidebook will be issued to each District, one to Dispatch and one to the Forest Fire Management Officer. Notice of revision will be sent to the holders of these copies who are then responsible for updating District copies. An electronic version of the guidebook will be maintained on the Caribou-Targhee Forest Website and will be considered the master document. Efforts will be made to keep this copy current as policy changes/and or additional subsections are added.

Revision Description/Author	Forest Supervisor Signature	Date Approved
Addition of Caribou Subsection to Guidebook. Analysis completed and documentation compiled by Kraig Carroll (Palisades/Teton Basin Zone Assistant Fire Management Officer).	<i>/s/ Jerry Reese</i>	6/24/04
Addition of Lemhi/Medicine Lodge Subsection to Guidebook. Analysis completed and documentation compiled by Jim Cox (Ashton/Island Park/Dubois Zone Assistant Fire Management Officer (Fuels).	<i>/s/ Jerry Reese</i>	6/24/04
Addition of Bighole Mountains, Centennial Mountains, and Island Park subsections. Revision also includes revised interior/suppression zones for Madison/Pitchstone subsection. Analysis completed and documentation compiled by Kraig Carroll (Fire Mgmt Specialist HQ), Jim Cox (Ashton/Island Park/Dubois Zone AFMO (Fuels), Spencer Johnston (South Fork Zone AFMO).		

Revision Description/Author	Forest Supervisor Signature	Date Approved
<p>Addition of Bighole Mountains, Centennial Mountains, and Island Park subsections. Revision also includes revised interior/suppression zones for Madison/Pitchstone subsection. Analysis completed and documentation compiled by Kraig Carroll (Fire Mgmt Specialist HQ), Jim Cox (Ashton/Island Park/Dubois Zone AFMO (Fuels), Spencer Johnston (South Fork Zone AFMO).</p>		

## Authority

**5140.1 - Authority.** Both the National Forest Management Act of October 22, 1976 (16 U.S.C. 1600 et seq.), and the Clean Air Act, as amended (42 U.S.C. 7401 et seq.), are applicable to the use of fire on National Forest System lands. These acts are summarized in FSM 5101.1. In addition, the Wilderness Act of September 3, 1964 (16 U.S.C. 1131, 1132), directs that wilderness be protected and managed so as to preserve its natural condition and be affected primarily by the forces of nature.

The Federal Wildland Fire Management Policy adopted December 18, 1995, by the Secretaries of Agriculture and the Interior directs agency heads and other officials to implement the principles, policies, and recommendations in the Final Report of the Federal Wildland Fire Management Policy and Program Review (FSM 5101.4). Additional direction is in the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide (FSM 5140.32, 5108). See Series 5000 manual direction at: <http://fsweb.wo.fs.fed.us/directives/html/fsm5000.html>

**5140.41 - Regional Forester:** The Regional Forester has the authority and responsibility for:

1. Approving direction for fire use embodied in forest plans.
2. Managing the Regional fire use program and coordinating the Regional fire use program with the National program.
3. Ensuring that Forests conduct prescribed fires and wildland fire use projects in compliance with National and Regional fire management policies and standards.
4. Under severe burning conditions, deciding whether or not to approve new fire use or continuation of existing fire use (FSM 5140.31, para. 9).
5. Ensuring the development and application of Regional standards for consistent preparation of the Prescribed Fire Burn Plan (RxBP) and Wildland Fire Implementation Plan (WFIP).
6. Ensuring the development and use of smoke management criteria to guide decisions on fire use projects (FSM 5144).
7. Ensuring the timely preparation and transmittal of annual accomplishment reports to the national fire use database (FSM 5147).

**5140.42 - Forest Supervisor:** The Forest Supervisor has the authority and responsibility for:

1. Integrating the role and use of fire and establishing fire management direction to meet resource objectives in the applicable forest plans.
2. Approving the Prescribed Fire Burn Plan (RxBP) and Wildland Fire Implementation Plan (WFIP). This authority may be delegated to a District Ranger, but only if the District Ranger has the requisite fire management knowledge, experience, and staff available.
3. Reporting to the Regional Forester existing or potentially severe burning conditions on the unit. Where the Regional Forester decides that the Supervisor may continue to make decisions on fire use on the unit under severe burning conditions, the Supervisor, depending on the complexity of the situation, may delegate fire use approval authority to a District Ranger, but only if the District Ranger has the requisite fire management knowledge, experience, and staff available.
4. Providing specific direction on fire use through annual approval of the Fire Management Plan consistent with the approved forest plan.
5. Ensuring that the RxBP or WFIP, and the personnel implementing them, including contractors, meet Service-wide and Regional requirements (FSM 5142, 5143, 5145, and 5148).
6. Ensuring adequate tracking and monitoring of all prescribed or wildland fire use at the Forest level (FSM 5142.21, para. 12 and FSM 5147).

## Fire Use Objectives and Acceptable Outcomes

Historically, fire has played a significant role in the Greater Yellowstone Area (GYA). Some plants have evolved with fire and have adapted to it in various ways. Fires occurred naturally at certain average time intervals, which varied by vegetation and climatic conditions. Fires were also set by humans on a fairly regular basis, particularly in the sagebrush/grass and aspen communities. These fires created mosaic patterns of different seral stages of vegetation across the landscape.

In the early 1900s public concern for protecting the forests from fire ushered in a period of aggressive fire suppression, which has continued to the present. With these suppression strategies and the lack of a prescribed fire program, the fire intervals that occurred historically have been altered. Due to the absence of fire, much of the forest vegetation has reached the mature age class and herbaceous/shrub types are in the later stages of succession. The mosaic patterns in the landscape are not as prevalent as before. These conditions increase the potential for fires of higher intensity, which may be detrimental to species that evolved with frequent, low intensity burns.

Fire Management objectives provide a general framework within which specific land management objectives are achieved for a management area. General Forest Service fire use objectives outlined in FSM 5140.2 and FSM 2324.21 include:

- To use fire from either management ignitions or natural ignitions in a safe, carefully planned, and cost-effective manner to benefit, protect, maintain, and enhance National Forest System resources.
- Reduce future fire suppression costs
- Restore natural ecological processes and achieve management objectives adopted in approved forest land and resource management plans (forest plans).
- Permit lightning fires to play, as nearly as possible, their natural ecological role within wilderness.
- Reduce, to an acceptable level, the risks and consequences of wildfire within wilderness or escaping from wilderness.

The Targhee National Forest Plan (revised 1997) acknowledges the natural role of fire in its fire dependant ecosystem. Specifically, forest wide goals pertaining to fire include:

- Identify the historic role of fire and restore fire as an ecological process, where appropriate to achieve multiple-use and ecosystem management objectives.
- Prescribed fire and managed natural fire is used to achieve desirable soil and habitat characteristics, improve forest health, and create or maintain diversity in vegetative structure, composition, and patterns as described in a PFC analysis.
- Suppress fire in a safe, cost-effective manner where necessary to protect human life and safety, developments, structures, and sensitive resource values.
- Fuel accumulations are reduced and managed within their historic range.



Specific goals and objectives pertaining to the included subsections include:

- Use management-ignited and natural fire to meet resource objectives. Comply with Jedediah Smith Wilderness Fire Management Plan (Madison Pitchstone and Teton Range subsections)
- By 2007 complete a fire management plan for the Teton Range subsection which will include opportunities for improving bighorn sheep habitat (Teton Range subsection).

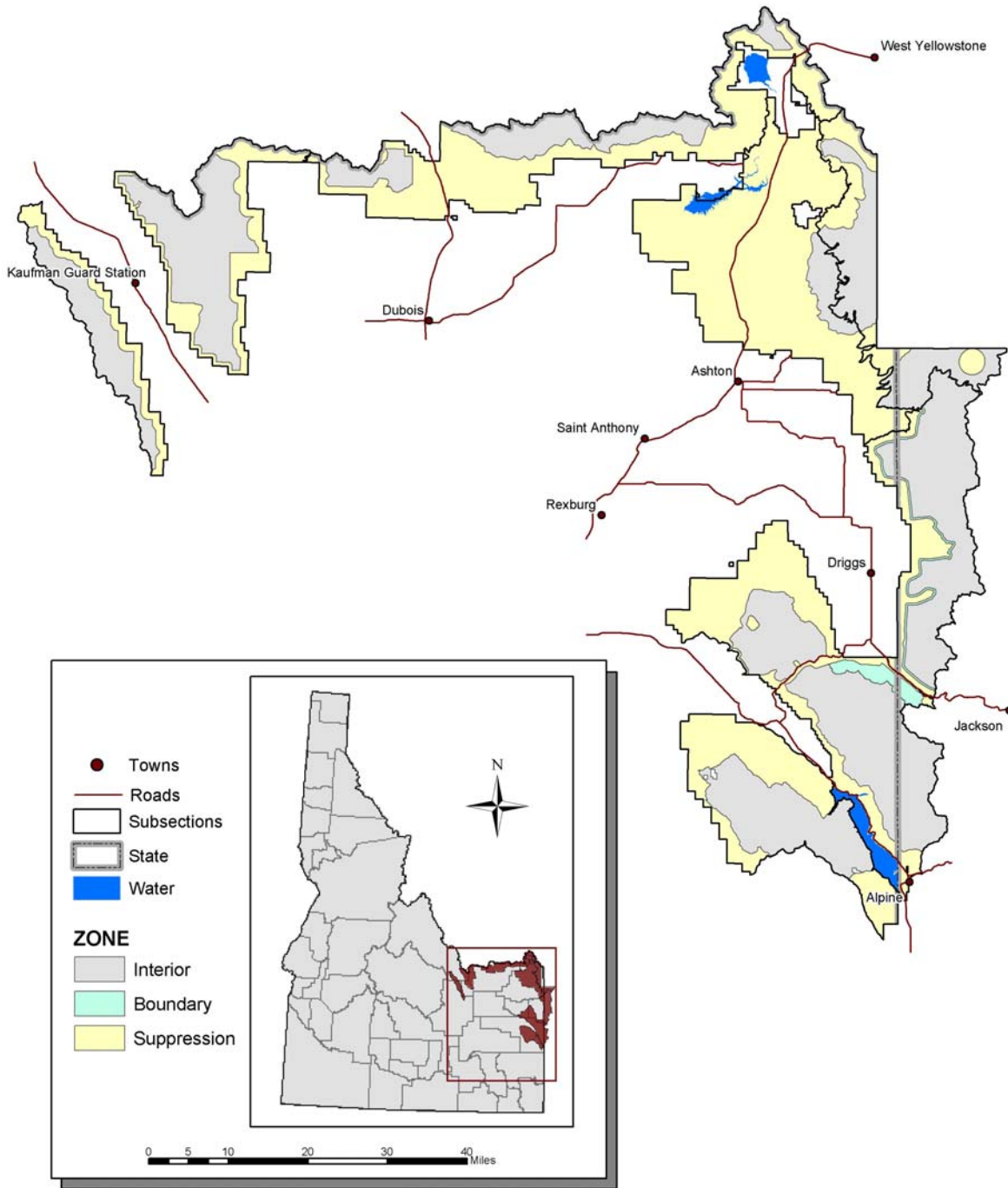
The Caribou-Targhee Fire Use Guidebook should also strive to achieve the following secondary objectives in order to permit lightning-caused fires to play their natural ecological role and reduce the risks and consequences of wildfire within the subsection.

- Safety- No injuries to personnel and/or members of the public. Strive to minimize damage to administrative sites and private property, while providing for firefighter and public safety first.
- Air Quality- Assess Air Quality impacts in communities surrounding the included FMAs. Smoke from wildland fire use is not human-caused, so it is permissible to impact the air quality in wilderness.
- Education- Provide and increase opportunities for the public and permittee (outfitters) to observe and interpret fire's natural role in the ecosystem. A proactive fire ecology program should be implemented and targeted at schools, public-service groups, and the general public, in order to achieve the predominate objectives of fire management
- Economic- Minimize the cost of fire management programs.

Acceptable outcomes from achieving these objectives are:

- Maintenance and/or enhancement of vegetative mosaics and biological diversity that result from fire.
- Continuing plant and animal relationships that evolve with fire.
- Conservation of genetic traits that certain vegetative species developed in response to fire.
- Living and dead fuels approach a "natural" state of continuity, arrangement, depth, and loading.
- Public awareness that a fire is a natural and essential component of many ecosystems.
- Forest visitors safely witness the natural role of fire.
- Fire effects on historical values are mitigated.
- Non-Forest lands are protected from fire.
- Where appropriate, minimum-impact suppression tactics are successfully utilized on holding actions involving Wildland Fire Use and suppression actions on wildfires.
- Appropriate management response and resources expended are commensurate with the location, values threatened and unfavorable impacts that may result from wildland fire

Madison Pitchstone, Teton Range, Caribou Range, Lemhi Medicine Lodge Vicinity Map (Map 1)



## AREA DESCRIPTION

# SUBSECTION DESCRIPTIONS

## MADISON-PITCHSTONE PLATEAUS SUBSECTION

The largest portion of the Madison Plateau subsection lies within Yellowstone National Park. The portion on the Forest is managed by the Ashton/Island Park District. The Ashton-Flagg Ranch Road and Fish Creek Road are the major access routes through the area. Grassy Lake, a 320-acre artificial lake, as well as other lakes and streams in the area, are popular fishing areas and are accessed by the Ashton-Flagg Ranch road. Several organized youth camps fall within this subsection. The Cave Falls road is the only motorized access to the southwest portion of Yellowstone Park. Segments of the Continental Divide National Scenic Trail and the Two Top National Recreation (snowmobile) Trail lie within this subsection.

Forests comprise 97 percent of the area. Lodgepole pine is the most common forest cover type (76 percent), with mixed stands of lodgepole pine and Douglas fir making up the remaining forested area (24 percent). Relatively minor amounts of aspen and various mixed conifers provide some diversity. The southern portion of the subsection is unique in that there are many wet meadows and small lakes intermingled with the forests.

The 1988 North Fork Fire scorched 17,700 acres in the northern part of this subsection, stimulating aspen suckering in numerous locations. This fire event and past timber harvesting primarily in the north half of the subsection have shifted 39 percent of the lodgepole pine into the nonstocked, seedling and sapling age classes. Active management of aspen has also provided some age class diversity. Due to fuel reductions and young age classes resulting from these disturbances, fire is less of a concern here than in many other areas. However, conditions in the southern portion of the Madison subsection are presenting some fire risks as aspen and lodgepole pine stands convert to Douglas fir through succession. Mature subalpine fir and Douglas fir in this southern area experienced outbreaks of western balsam bark beetle and Douglas-fir beetle in the past decade. These conditions have subsided, but could easily recur since vegetation conditions have not changed.

Currently 63 percent of the forests are in a mature or older age classes and provide suitable nesting sites for various bird species. Currently 23 percent of the forested acres are in nonstocked and seedling conditions, which provide foraging habitat.

The two designated wildernesses on the Forest lie wholly or partially within this subsection. The Jedediah Smith Wilderness (123,451 acres) is mostly in the Teton Range subsection with the balance in the Madison Plateau subsection. The Winegar Hole Wilderness (10,715 acres) is totally within the Madison Plateau subsection. Winegar Hole is largely primitive with very little use. This is mostly due to access difficulty, since there are only four miles of trail in the area. Use of this area is mostly for hunting big game. The Jedediah Smith is intensively used in the summer with approximately 74,000 visits (hiking, backpacking, and horseback riding). This is a spectacular mountainous area on the west slope of the famous Teton Mountain Range. These wildernesses are two of twelve designated in the Greater Yellowstone Area, which total 3.8 million acres. An area in this subsection in Idaho adjoining Wyoming's Winegar Hole Wilderness is recommended for wilderness designation.

## TETON RANGE SUBSECTION

This area encompasses the Teton Mountains, bounded on the north by South Boone Creek, on the south by Highway 22, on the west by the Teton Basin and on the east by Jackson Hole in Wyoming. The Teton Range is a spectacular line of high peaks rising abruptly along the east side of the Teton Basin. The landscape is a diverse mix of forested and open vegetation. The Jedediah Smith Wilderness traverses the upper portions of the west slopes of the Teton Mountains. The Grand Targhee Ski and Summer Resort is a major tourist destination. Two permitted organized youth camps operate within the subsection. This area is known for its many backcountry trail systems, which are accessible by horse or foot.

The landscape is a diverse mix of forested (57 percent) and open (43 percent) community types. Forest tree species include Douglas fir, lodgepole pine and mixed conifers. Lodgepole is mixed with Douglas fir in 31 percent of the forested area, indicating that the pine is converting to Douglas fir through succession. Open Douglas-fir forests, mountain brush, aspen and sagebrush pockets are found predominately on south and west aspects. Aspen is being encroached upon by conifers as succession proceeds, and the amount of aspen has declined compared with historic levels due to fire suppression. Upper elevations are characterized by dense mixed conifer forests, open grass/forb meadows, and talus slopes. Conifers are moving into riparian areas and mountain meadows due to fire suppression.

Since much of the Teton Range subsection is designated wilderness, timber harvest has been limited. Due to this fact and long-term fire suppression, only one percent of the forested acres is in the nonstocked, seedling or sapling age classes. The preponderance of mature and older forests (97 percent of total) makes this area suitable habitat for species such as marten and owls that prefer late-seral stage forests. Conversely the lack of fire has contributed to a decline in habitat for bighorn sheep and promoted susceptibility of the forested lands to insect infestations, diseases and large-scale fires. In recent years the western balsam bark beetle has been active in the subalpine fir. The Douglas-fir beetle has killed pockets of Douglas fir in the past decade, but beetle populations have declined since 1992.

The Jedediah Smith Wilderness (123,451 acres) is mostly in the Teton Range subsection with the balance in the Madison-Pitchstone Plateaus subsection. The Jedediah Smith is intensively used yearlong with approximately 74,000 visits per year. Some of this use is shared with Grand Teton National Park, lying immediately to the east across the Teton Crest.

Teton Valley has been experiencing a development boom recently and urban interface is a growing concern for the Forest.

The subsection includes the Bechler-Teton Bear Management Unit. This area will experience little vegetation treatment in the near future while providing a high degree of security for grizzly bear. In addition to grizzly bears, peregrine falcon, bighorn sheep and many big game species inhabit the area.

Of critical importance to this subsection is the high amount of mature and over mature vegetation. To achieve the desired vegetation conditions for all of the management prescriptions will require careful fire management since little of this area will be available for silvicultural treatment.

### *Caribou Range Mountains Subsection*

This subsection is the portion of the Caribou National Forest administered by the Targhee. It lies south of the South Fork of the Snake River. Steep mountain slopes and canyons dominate the landscape. The Palisades Reservoir is shared between this subsection and the Big Hole/Palisades subsection with high mountain trails, motorized use on trails, and backcountry use as well as hunting, fishing and water sports on the reservoir and the Snake River. There are several summer home divisions and two organizational camps. Forest lands are visible from U.S. Highway 26, the major travel corridor between Idaho Falls, Idaho and Jackson, Wyoming. Very little logging has taken place in the past. Both cattle and sheep grazing occur.

One utility corridor (electrical transmission line) is located in this subsection. It is visible from the Fall Creek Road but does not dominate the landscape. Maintenance work and line upgrades can be seen from travel routes.

The Caribou Subsection is 60 percent forested and 40 percent nonforested. The primary forest types are aspen (31 percent) and mixed lodgepole and Douglas-fir (47 percent). The interspersions of forests with sagebrush, grass/forb meadows and mountain brush provides for good diversity of plant species. The northeastern boundary area of the subsection includes cottonwood river bottom forests along the Snake River.

Age class diversity is limited. Some limited timber management has occurred in the lodgepole pine/Douglas-fir type. Almost no harvesting has taken place in the Englemann spruce/subalpine fir type. Some 99 percent of the conifer forests are in mature or older seral stages. Douglas-fir is becoming more predominant as it encroaches on stands of lodgepole pine, aspen or shrubs. Evidence of insect attacks is readily visible in the Douglas-fir type and is increasing each year. It is likely that there is more Douglas-fir here now, and less aspen, lodgepole pine, and shrubland, than existed historically. Fires have been suppressed for many years. Because stands are scattered and difficult to access, this condition is likely to persist. Treatment opportunities center around prescribed burns and limited vegetation treatment where access is more easily obtained.

Most of the shrublands are also in late seral stages. Consequently, a risk of large fires, insects and disease outbreaks is high. Insect attacks in recent years have been similar to those in the Big Hole/Palisades subsection. The Snake River cottonwood stands are also predominantly in the mature age class due to lack of disturbance, which they need in order to regenerate. Historic disturbance patterns consisting of periodic flooding have been interrupted since placement of the Palisades Dam.

Establishing natural regeneration of both Douglas-fir and lodgepole pine following harvest has been a problem in this subsection, and most sites have required planting.

Much of this subsection is made up of five inventoried roadless areas. Bear Creek is the largest inventoried area. Development or evidence of humans is easier to see in these roadless areas than in the Big Hole Mountains subsection. The size of the roadless areas and intrusions from motorized-use roads limit their wilderness characteristics.

*Lemhi/Medicine Lodge Subsection.*

SETTING

This subsection includes the Lemhi Mountains and the Medicine Lodge/Beaverhead Mountains. A variety of vegetation exists with forested communities dominated by Douglas-fir and limber pine. Sagebrush/bunchgrass and mountain mahogany communities are common at lower elevations and on strong southerly exposures. Limber pine communities and alpine meadows exist at the high elevations. This subsection is rich in mining history with old mining sites and remnants of town sites. In the Birch Creek Valley four preserved brick adobe charcoal kilns remain of sixteen originally built to furnish charcoal to the Nicholia Mine. This area contains some of the most significant Native American sites on the Forest, as well as a segment of the Continental Divide National Scenic Trail, two recommended wildernesses (Diamond Peak and Italian Peaks) and most big game species found on the Forest.

About 37 percent of this subsection is forested; this is more forest land than occurred historically. Information from the early 1900s indicates that in some areas Douglas-fir has recently established itself on lands formerly dominated by grasses and sagebrush. Some riparian communities also appear to have more conifers than they did historically.

Approximately 90 percent of the forested land is in a mature age class, indicating a lack of age class diversity in the subsection. With 90 percent of the forests in Douglas-fir there is also a lack of tree species diversity. Many of the Douglas-fir stands are densely stocked. The uniformity of tree species and age classes, as well as the dense stocking, make this area's forests more susceptible to ecosystem disturbances such as insects, diseases and large fires. An example of the latter was the Gallagher Peak Fire which burned 37,230 acres in 1979. This was the largest fire in the last twenty years on the Forest.

Aspen forest acreage in this subsection has declined since the early twentieth century due to fire suppression. This is of concern since aspen provides important habitat for many wildlife species. It is also an important factor in the scenic beauty of the Forest.

Existing biological potential for woodpeckers is 26 to 34 percent. This indicates that larger size snags are not abundant or well distributed in this subsection at this time, even though a very high percentage of the forests are in mature and older successional stage

## ISLAND PARK SUBSECTION (M331AA)

This subsection includes the west half of the Island Park, Ashton, and the north dissected tablelands portion of the Teton Ranger Districts (Jackpine Loop). The dominant landscape feature of this subsection is a large volcanic caldera. Highway 20 is the only major highway that travels through this subsection. Among the many scenic attractions are Upper Mesa Falls, the last major undisturbed falls on the Columbia River system. The Mesa Falls Scenic Byway, established in 1989, provides motorists with an impressive view of the Teton Mountain Range and accesses a summer interpretive site along the two falls.

The Island Park subsection offers excellent trout fishing at Island Park Reservoir and along the Henry's Fork, Buffalo River, Warm River, Fall River and Bitch Creek. The Island Park subsection is also known nationally for its many snowmobile and cross-country ski trails. The significant influx of summer and year-round residents to private lands adjacent to the Forest in recent years is expected to continue. This urban interface is a growing concern for the Forest. The area shows signs of large scale timber harvesting due to the salvage efforts following the mountain pine beetle epidemics in the 1960s and 1970s. Harriman State Park lies in the heart of the Harriman Wildlife Refuge, with 16,000 acres of forest, meadows, lakes and streams.

A small portion of the Winegar Hole recommended wilderness lies along the eastern border of this subsection. The Big Spring National Recreation (water) Trail and segments of the Nez Perce National Historic Trail lie within this subsection.

The landscape is dominated by forest covered type, which blankets 93 percent of the area. Forested areas are primarily lodgepole pine types (70 percent) that contain small pockets of aspen, sagebrush/grass, grass meadow and mountain brush. Douglas-fir (ten percent) and mixed lodgepole pine/Douglas-fir (15percent) cover types provide some diversity in the area. Lodgepole pine occupies the floor of the Island Park Caldera and Douglas-fir cover types are concentrated on the caldera rim. On the caldera rim, aspen and sagebrush areas are being encroached upon by Douglas-fir as the process of succession continues.

Currently 61 percent of the forests are in a mature age class or older which provide suitable nesting sites for a variety of bird species. Since 93 percent of this subsection is forested, creation of young forest age classes probably increases the amount of suitable foraging habitat. Currently 26 percent of the forested acres are in nonstocked and seeding conditions which provide foraging habitat.

Salvage harvesting has shifted 35 percent of the forested acres into the nonstocked, seedling and sapling classes. Active management of aspen, as well as aspen sprouting in lodgepole pine clearcuts, has moved 34 percent of the aspen into these young classes. Other cover types are concentrated in the mature age group.

Mature Douglas-fir on the caldera rim experienced outbreaks of spruce budworm and Douglas-fir beetle in the past decade. These have now subsided, but could easily recur given the mature condition of the Douglas-fir and the presence of multiple-storied stands. Due to fuel reductions and young age classes associated with timber harvest, fire is less of a concern here than in most other subsections.

## CENTENNIAL MOUNTAINS SUBSECTION (M332EA)

This subsection covers the Centennial Mountains between the east fork of Irving Creek on the west and Reas Pass to the east. The Centennials, which form part of the Continental Divide, are a scenic mountain range with high mountain meadows scattered among spruce/fir and Douglas-fir forests. At lower elevations sagebrush/grasslands grade into Douglas-fir and lodge pole pine forests. The recommended Lionhead wilderness, in the northeast portion of the subsection, abuts existing and recommended wilderness in Montana. The major travel corridors are Highway 20 and 87, and a portion of Interstate 15. The Yale-Kilgore road is a secondary travel route connecting Island Park to Kilgore and Dubois. In the northeast portion of the subsection is Henry's Lake, a world-renowned fishery. Segments of the Continental Divide National Scenic Trail, Nez Perce National Historic Trail and the Two Top National Recreation (snowmobile) Trail lie within this subsection.

This subsection is dominated by sagebrush/grassland and Douglas-fir communities, some of which have seen substantial timber management activities. Forested communities cover 71 percent of the subsection. Approximately 51 percent of the forest acres are Douglas-fir. Lodgepole pine (21 percent) is found in pockets on low productivity soils. Mixed lodgepole pine/Douglas-fir (13 percent) and other mixed conifers (ten percent) are also well represented. Species such as Douglas-fir and subalpine fir are becoming established as stands move toward late seral stages through succession. Aspen comprises four percent of the forested acres, which is less than was historically present. Fire suppression has allowed conifers to take over areas that were previously rangeland, tall forbs communities, and aspen. Conifers have also encroached into riparian areas.

Mature forests make 79percent of the forested acres, indicating a lack of diversity in age classes. Existing biological potential for woodpeckers is 33 to 52 percent. Larger size snags are not abundant or well distributed in this subsection. Severe fires, insects and diseases are concerns in this subsection, mainly because of the large component of mature forests. The wildland/urban interface has significantly increased due to the development of the private lands within the forest protection boundary. This increases the risk of a fire spreading between the forest and private lands.

The subsection contains portions of two subunits within the Henry's Lake Bear Management Unit.



## BIG HOLE MOUNTAINS SUBSECTION (M331Dk)

This subsection includes all National Forest System lands between Highway 33 in Idaho and Highway 22 in Wyoming on the north and South Fork of the Snake River to the south. Several major highways provide access: Idaho Highway 26, 31, and 33, and Highway 22 in Wyoming. Highway 31 is a State Scenic Byway over Pine Creek Pass. Vegetation consists of mountain brush, grass/forb openings, aspen and forests of Douglas-fir and lodgepole pine. The area has a variety of recreational opportunities including Kelly Canyon Nordic Ski Trails, Palisades backcountry, and trail motorbike riding. Palisades Reservoir and its many boat ramps are used by water sports enthusiasts. The Palisades Creek National Recreation Trail lies within this subsection.

Several utility corridors (electrical transmission lines) are located in this subsection. Most follow the highway system and are visible from the highway but do not dominate the landscape. Maintenance work and line upgrades can be seen along these highways. Additional power line needs have been identified and are expected in the near future.

There is increasing development of summer home and year-round residences adjacent to the Forest boundary. It is possible that some inholdings within the Forest boundary may also see development in the near future.

The landscape is a mixture of vegetation community types. Some 65 percent of the landscape is forested and 35 percent is nonforested. The most common forested type is mixed lodgepole pine and Douglas-fir, comprising 47 percent of the forested acres. Aspen, pure Douglas-fir and pure lodgepole pine each account for roughly 15 percent of the forest. Mountain mahogany is found on south slopes and hawthorne, chokecherry, serviceberry, antelope bitterbrush and Rocky Mountain maple on various slopes and aspects depending on elevation. Grass/forb meadows and sagebrush are also common.

The northwestern boundary of the subsection extends into the cottonwood river bottom type along the Snake River. There is concern about the lack of cottonwood regeneration along the Snake River, due to the lack of historic river flood levels. A high-density bald eagle population inhabits this area.

Currently 95 percent of the subsection is in mature age class which provides suitable habitat for a variety of interior wildlife species. This creates hazards for large fires, insect infestations and disease problems. In the north end of the subsection Douglas-fir beetles and western balsam bark beetle caused damage in the 1980s and early 1990s; this tapered off in 1994. Insect information is not available for the southern portion. Due to fire suppression and lack of disturbance over the years, conifers have encroached into some sites that were historically nonforested. This has reduced overall vegetative diversity in the subsection. Only four percent of the forested stands are in nonsotcked, seedling or sapling age category. These are concentrated in the north end of the subsection where timber harvest has occurred. Most of the shrublands are also in late age classes or seral stages.

The Wyoming portion of the Palisades Roadless area was designated by Congress as a Wilderness Study Area in 1984. The Study Area contains 132,000 acres, of which over 79,800 acres are administered by the Bridger-Teton National Forest. Some 110,520 acres of this roadless area in Idaho are recommended as wilderness but have no congressional action taken on them.

## **Subsections and Prescriptions**

In recent years the Forest Service has embraced the concept of Ecosystem Management. This is an approach to natural resource management that strives to ensure healthy, productive, sustainable ecosystems by blending the needs of people and environmental values in a given area such as the Forest. An ecosystem is a complex system of living and nonliving components that interact and change continually. Healthy ecosystems are those that are in PFC. Ecosystems that are in PFC display resilience to disturbance to the structure, composition and process of their biological and physical components. They retain all of their parts and functions for future generations even though vegetation patterns, human uses or other conditions may change. Understanding ecological processes (fire and other natural disturbances) and how these processes shaped vegetation patterns over time in a landscape are important steps towards implementing Ecosystem Management.

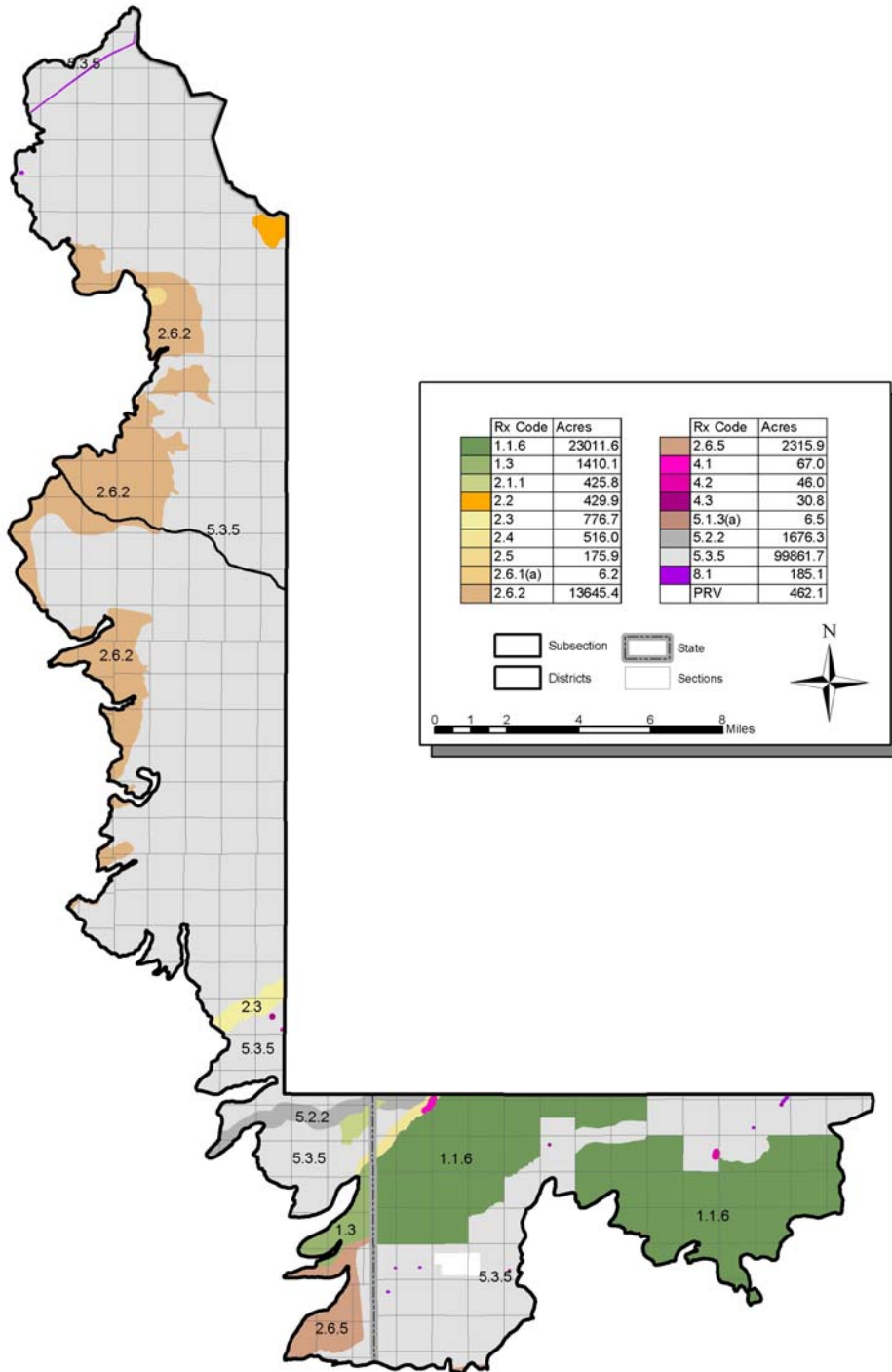
Working guidelines for ecosystem management state that effects of proposed actions should be considered at several geographic scales including one scale larger and one smaller than that at which the action is proposed (USDA Forest Service, June 1994). Based on a larger national mapping effort it was determined that the Forest wholly or partially overlays seven large ecological units, or subsections, which were delineated using physiographic parameters. Using this approach, resource conditions can be viewed at a scale between the larger forest and the smaller prescription area levels. This guidebook focuses on the Madison-Pitchstone Plateaus (M331Ab), Teton Range (M331Db), Caribou Range Mountains (M331Di) and Lemhi/Medicine lodge (M332Ek), Island Park (M331Aa), Centennial Mountains (M332Ea), and Bighole Mountains (M331Dk) subsections. These subsections are henceforth referred to as the Madison-Pitchstone Plateaus Fire Management Area (MP FMA), Teton Range Fire Management Area (TR FMA), Caribou Range Fire Management Area (CR FMA) and Lemhi/Medicine Lodge Fire Management Area (LM FMA) Island Park FMA (IP FMA), Centennial Mountains FMA (CM FMA) and Bighole Mountains FMA (BH FMA).

The Targhee National Forest Plan (revised 1997) implements an array of different management regimes which have been applied to various parts of the Forest to address specific management needs or public desires. The 45 prescriptions are organized in categories and presented in a sequence allowing progressively more active management. All prescriptions are organized according to the five components used in the Final EIS and forest wide direction. Prescriptions, as they pertain to wildland fire use and prescribed fire within the FMAs, are summarized in Maps 2-8 and Tables 1-7. More comprehensive management prescription descriptions can be found in the Targhee National Forest 1997 Revised Forest Plan.

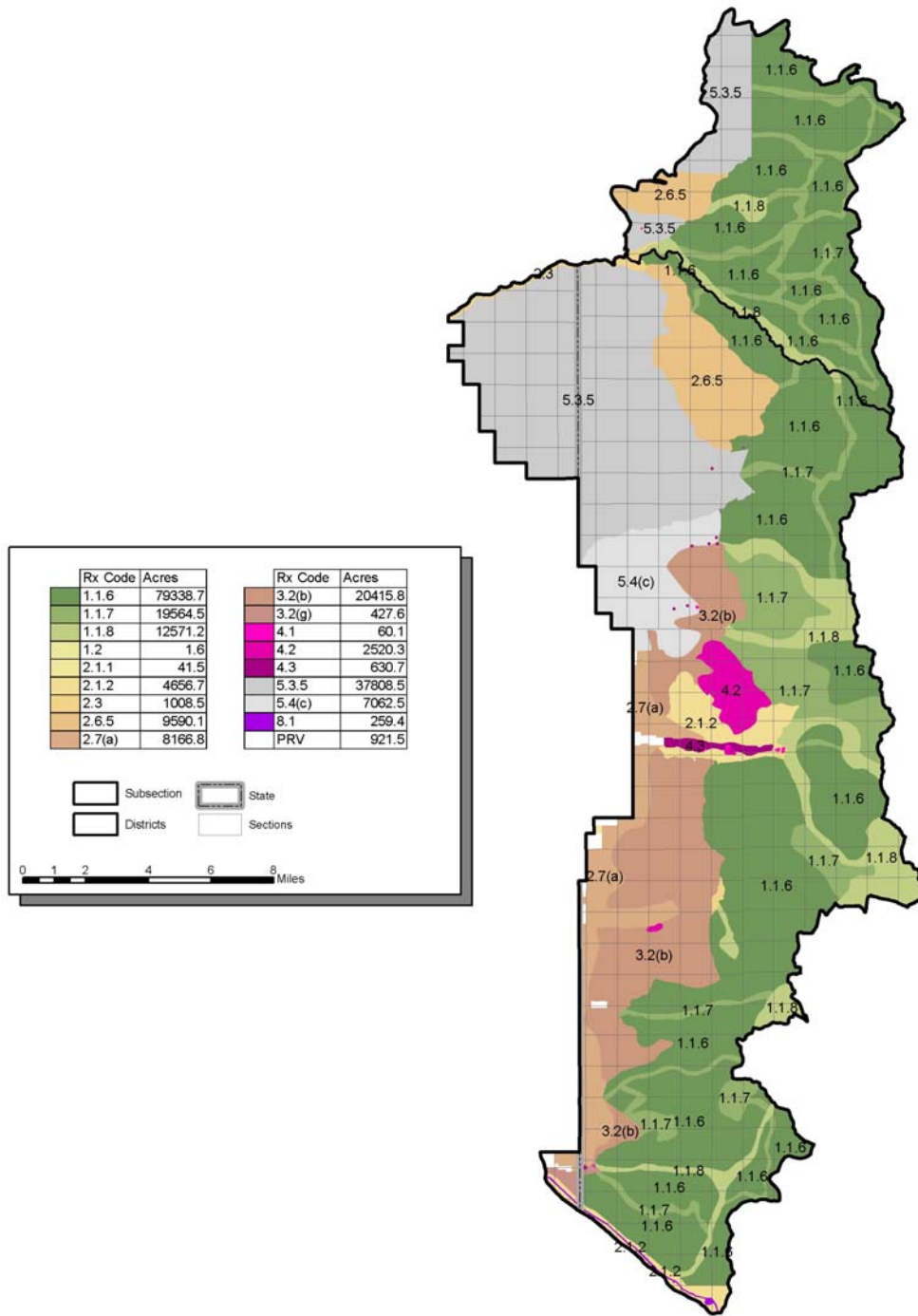




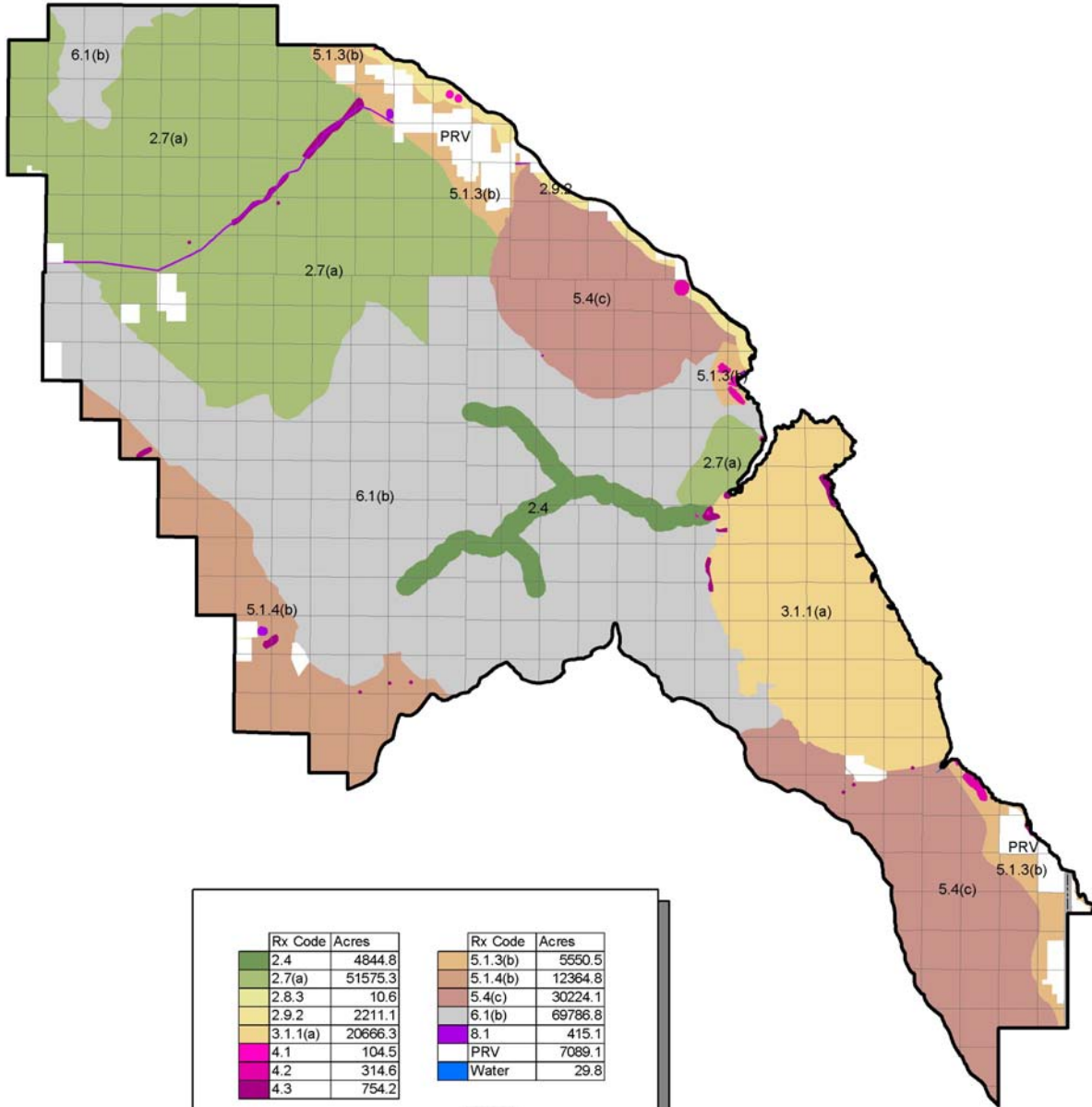
**Management Prescriptions Map (Map 2)**  
Madison-Pitchstone Plateaus



**Management Prescriptions Map**  
Teton Range subsection (Map 3)






**Management Prescriptions Map (Map 4)  
Caribou Range Mountains subsection**



Rx Code	Acres	Rx Code	Acres
2.4	4844.8	5.1.3(b)	5550.5
2.7(a)	51575.3	5.1.4(b)	12364.8
2.8.3	10.6	5.4(c)	30224.1
2.9.2	2211.1	6.1(b)	69786.8
3.1.1(a)	20666.3	8.1	415.1
4.1	104.5	PRV	7089.1
4.2	314.6	Water	29.8
4.3	754.2		

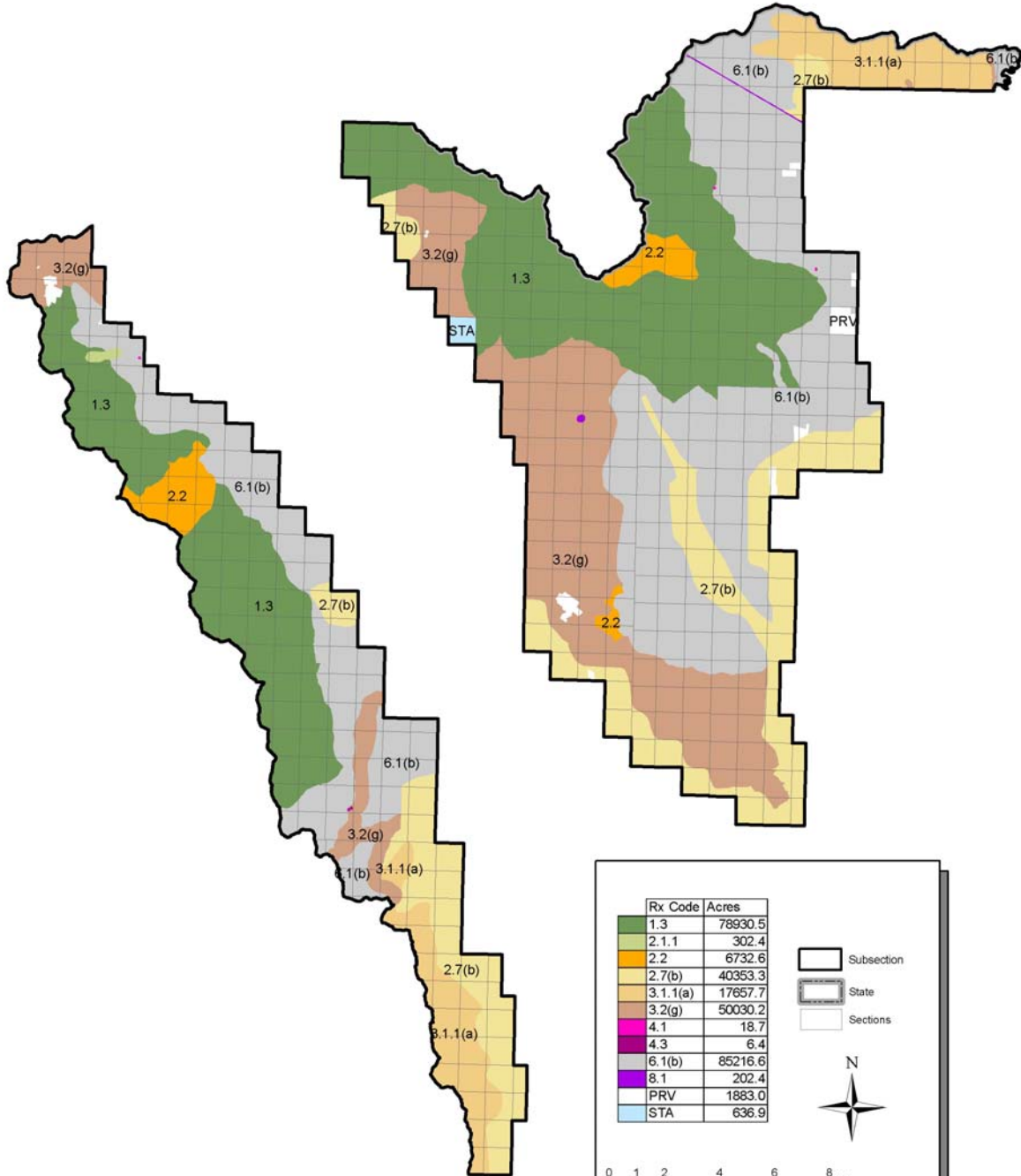
  

 Subsection	 State
	 Sections

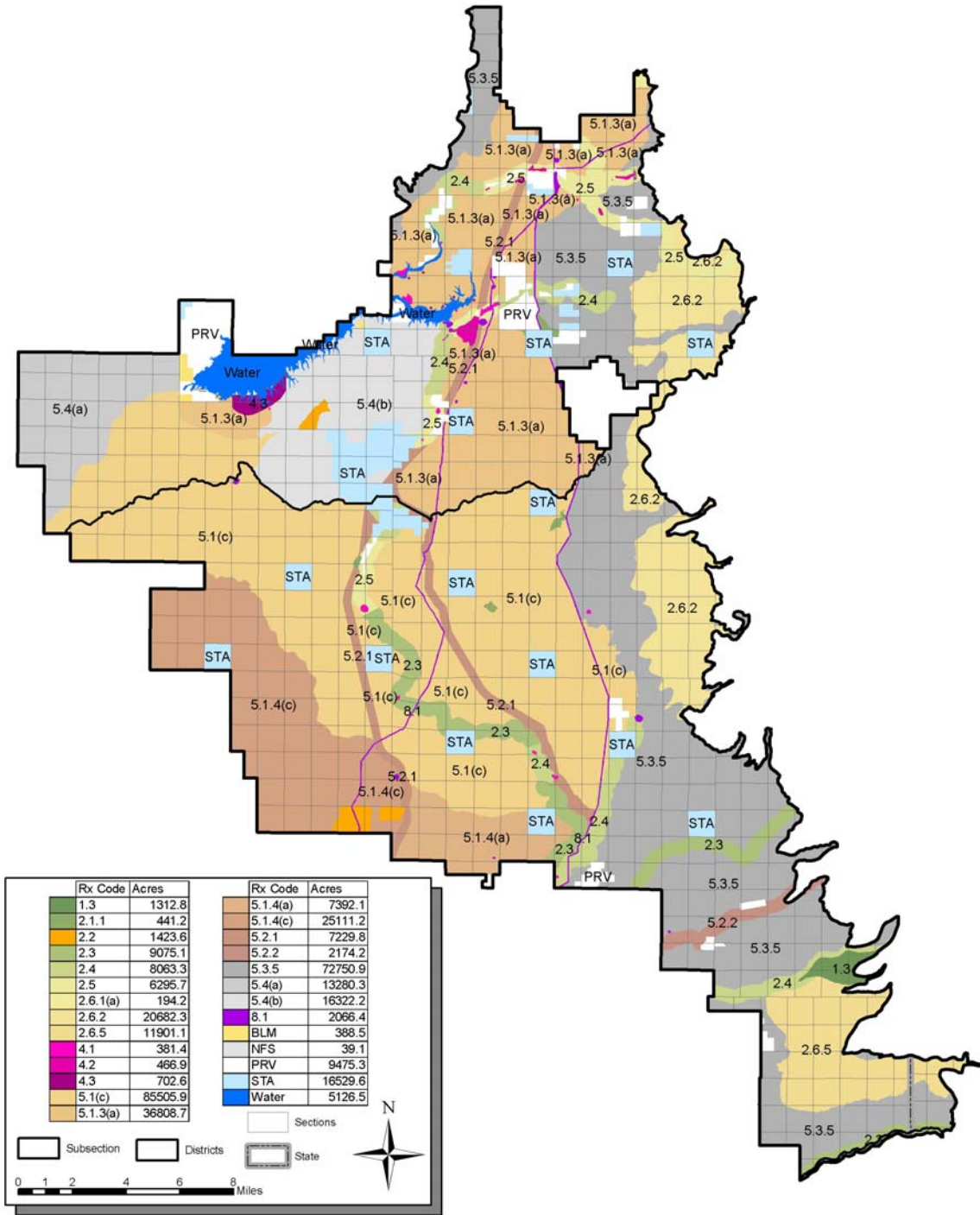
0 1 2 4 6 8 Miles

Management Prescriptions Map (Map 5)  
Lemhi/Medicine Lodge subsection

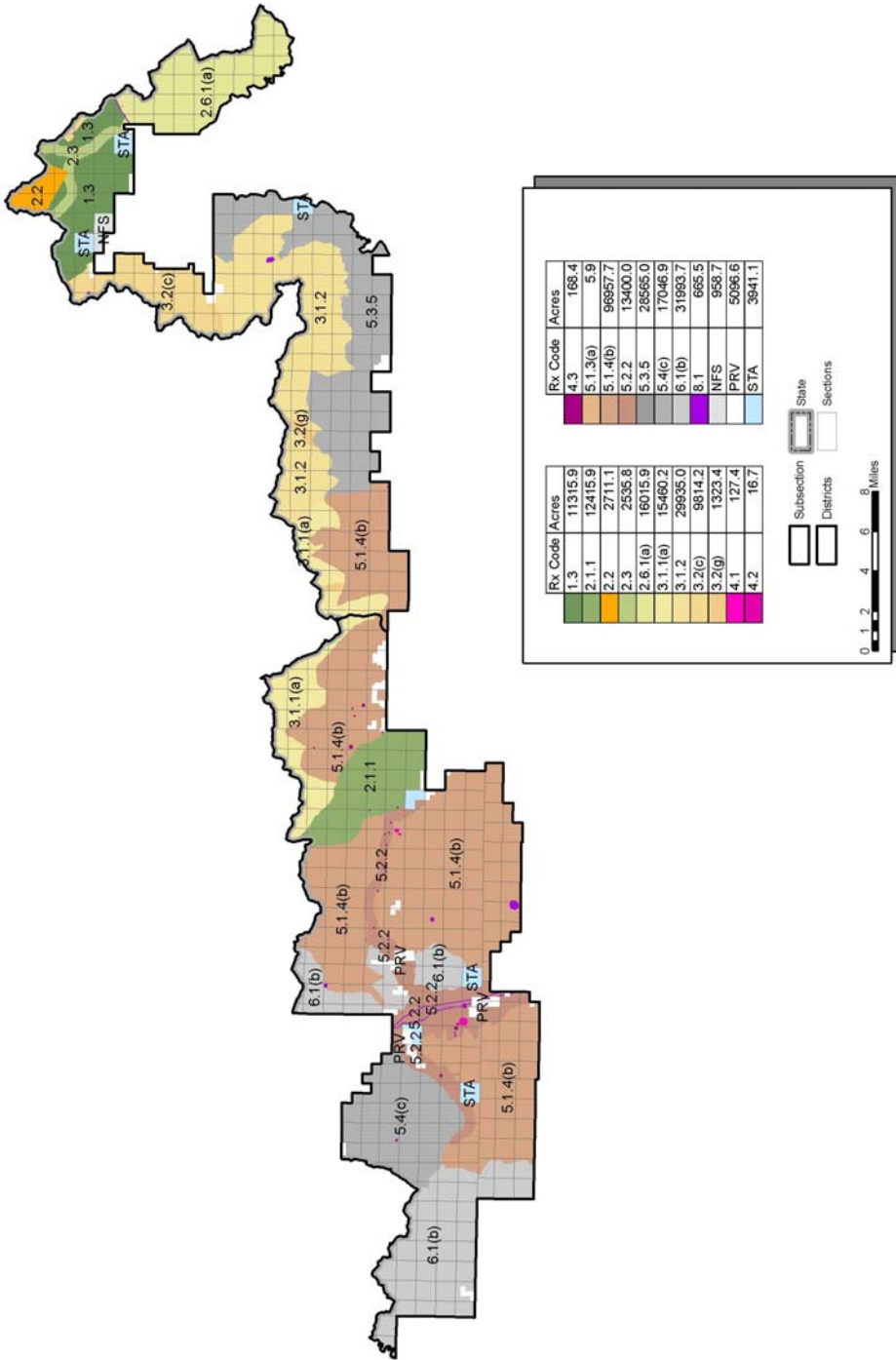




Management Prescriptions Map (Map 6)  
Island Park Subsection



Management Prescriptions Map (Map 7)  
Centennial Mountains Subsection



**Management Prescriptions Map (Map 8)  
Big Hole Mountains Subsection**

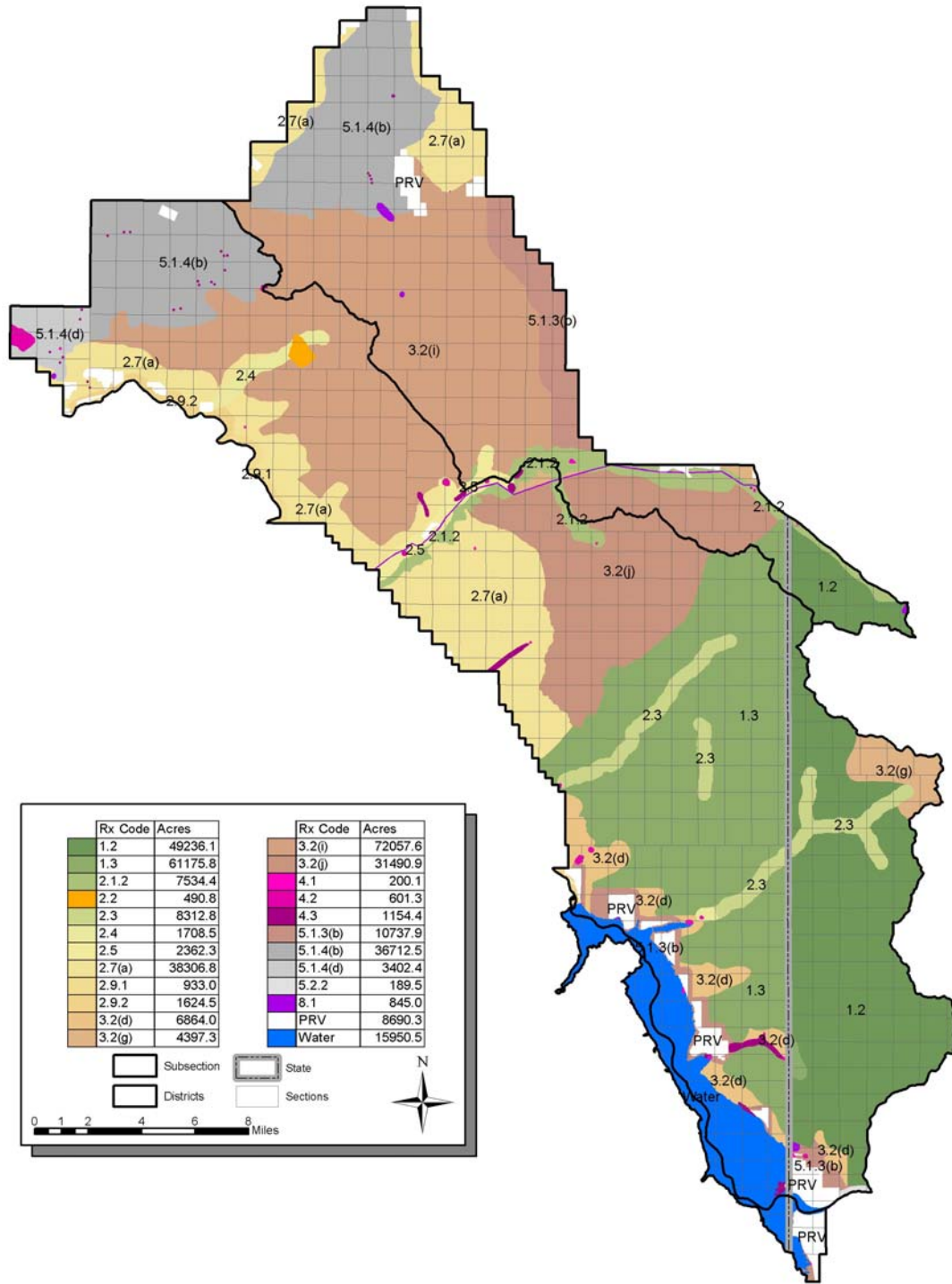


Table 1 Madison-Pitchstone Plateaus FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.1.6	25,689	Yes	Yes
1.1.7	629	Yes	Yes
1.3	2627	Yes	Yes
2.1.1	439	Yes	Yes
2.2	430	Yes	Yes
2.3	1972	Yes	Yes
2.4	1409	Yes	Yes
2.5	1405	Yes	Yes
2.6.1(a)	5	Yes	Yes
2.6.2	26,072	Yes	No
2.6.5	1870	Yes	Yes
2.8.3	15,764	Yes	Yes
4.1	89	No	Yes
4.2	46	No	Yes
4.3	31	Yes	Yes
5.1.3(a)	2	Yes	Yes
5.2.2	1883	No	Yes
5.3.5	115,836	Yes	Yes
8.1	223	No	Yes
PRV	815	N/A	N/A
STA	637	N/A	N/A
<b>Total</b>	<b>197,873</b>		

Table 2 Teton Range FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.1.6	91,682	Yes	Yes
1.1.7	19,566	Yes	Yes
1.1.8	12,571	Yes	Yes
1.2	14,294	Yes	Yes
2.1.1	41	Yes	Yes
2.1.2	7526	Yes	Yes
2.3	2567	Yes	Yes
2.6.5	23,806	Yes	Yes
2.7(a)	8166	Yes	Yes
3.2(b)	20,415	Yes	Yes
3.2(g)	730	Yes	Yes
4.1	67	No	Yes
4.2	2520	No	Yes
4.3	630	Yes	Yes
5.3.5	64,729	Yes	Yes
5.4(c)	7062	Yes	Yes
8.1	384	No	Yes
PRV	384	N/A	N/A
<b>Total</b>	<b>277,715</b>		

Table 3 Caribou Range FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
2.4	4895	Yes	Yes
2.7(a)	42110	Yes	Yes
2.8.3	37809	Yes	Yes
2.9.2	2215		
3.1.1(a)	16732	Yes	Yes
4.1	109	No	Yes
4.2	315	No	Yes
4.3	755	Yes	Yes
5.1.3(b)	4595	Yes	Yes
5.1.4(b)	9787	Yes	Yes
5.4(c)	24849	Yes	Yes
6.1(b)	54599	Yes	Yes
8.1	415	No	Yes
Water	5917		
PRV	8259		
<b>Total</b>	<b>213311</b>		

Table 4 Lemhi /Medicine Lodge FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.3	78,927	Yes	Yes
2.1.1	302	Yes	Yes
2.2	6733	Yes	Yes
2.7 (b)	35,649	Yes	Yes
2.8.3	20,637	Yes	Yes
3.1.1(a)	15,404	Yes	Yes
3.2(g)	45,291	Yes	Yes
4.1	19	No	Yes
4.3	6	Yes	Yes
6.1(b)	76,463	Yes	Yes
8.1	203	No	No
PRV	1882		
STA	5869		
Total	282,180		

Table 5 Island Park FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.3	96	Yes	Yes
2.1.1	428	Yes	Yes
2.2	1,288	Yes	Yes
2.3	8,524	Yes	Yes
2.4	6,094	Yes	Yes
2.5	2,506	Yes	Yes
2.6.2	4,743	Yes	No
2.6.5	11,887	Yes	Yes
2.8.3	17,104	Yes	Yes
3.2(b)	148	Yes	Yes
4.1	215	No	Yes
4.2	376	No	Yes
4.3	679	Yes	Yes
5.1(c)	82,459	Yes	Yes
5.1.3(a)	19,818	Yes	Yes
5.1.4(a)	6,606	Yes	Yes
5.1.4(c)	23,354	Yes	Yes
5.2.1	6,092	No	Yes
5.2.2	1,356	No	Yes
5.3.5	67,429	Yes	Yes
5.4(a)	13,300	Yes	Yes
5.4(b)	14,288	Yes	Yes
5.4(c)	4,172	Yes	Yes
8.1	1,629	No	Yes
BLM	389	N/A	N/A
PRV	4,387	N/A	N/A
STA	18,556	N/A	N/A
Water	3,994	N/A	N/A
<b>Total</b>	<b>321,917</b>		

Table 6 Centennial Mountains FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.3	11,314	Yes	Yes
2.1.1	12,417	Yes	Yes
2.2	2,711	Yes	Yes
2.3	2,536	Yes	Yes
2.4	1,076	Yes	Yes
2.5	2,560	Yes	Yes
2.6.1(a)	17,047	Yes	Yes
2.7(b)	1,930	Yes	Yes
2.8.3	31,428	Yes	Yes
3.1.1(a)	13,934	Yes	Yes
3.1.2	26,757	Yes	Yes
3.2(c)	9,309	Yes	Yes
3.2(g)	1,187	Yes	Yes
4.1	273	No	Yes
4.2	107	No	Yes
4.3	198	Yes	Yes
5.1.3(a)	14,533	Yes	Yes
5.1.4(b)	85,177	Yes	Yes
5.2.1	925	No	Yes
5.2.2	10,875	No	Yes
5.3.5	29,613	Yes	Yes
5.4(b)	1	Yes	Yes
5.4(c)	15,044	Yes	Yes
6.1(b)	26,324	Yes	Yes
8.1	1,066	No	Yes
NFS	2	N/A	N/A
PRV	7,413	N/A	N/A
STA	5,869	N/A	N/A
Water	1,051	N/A	N/A
<b>Total</b>	<b>332,692</b>		



Table 7 Big Hole Mountains FMA Prescriptions

Prescriptions	Acres	Wildland Fire Use	Prescribed Fire
1.2	49,236	Yes	Yes
1.3	61,173	Yes	Yes
2.1.2	6,207	Yes	Yes
2.2	491	Yes	Yes
2.3	8,313	Yes	Yes
2.4	1,708	Yes	Yes
2.5	2,362	Yes	Yes
2.7(a)	33,083	Yes	Yes
2.8.3	33,786	Yes	Yes
2.9.1	933	Yes	Yes
2.9.2	1,586	Yes	Yes
3.2(d)	5,118	Yes	Yes
3.2(g)	3,330	Yes	Yes
3.2(i)	59,621	Yes	Yes
3.2(j)	26,756	Yes	Yes
4.1	133	No	Yes
4.2	595	No	Yes
4.3	960	Yes	Yes
5.1.3(b)	9,329	Yes	Yes
5.1.4(b)	31,473	Yes	Yes
5.1.4(d)	2,898	Yes	Yes
5.2.2	150	No	Yes
8.1	860	No	Yes
Water	9,875	N/A	N/A
PRV	7,840	N/A	N/A
NFS	61	N/A	N/A
<b>Total</b>	<b>357,779</b>		

- A "no" designation in either the Wildland Fire Use column or Prescribed Fire column indicates that particular management activity is not permitted within the given management prescription.
- A "yes" designation in either the Wildland Fire Use column or Prescribed Fire column indicates that particular management activity is permitted within the given management prescription.

## GRIZZLY BEAR RECOVERY ZONE

The entire MP-FMA, as well as portions of the CM-FMA, IP-FMA, TR-FMA is situated within the Grizzly Bear Recovery Zone. Wildland fire use and prescribed fire is permitted within the Grizzly Bear Recovery Zone in order to maintain or improve grizzly bear habitat. The primary areas for habitat improvement are those that provide for whitebark pine regeneration.

Fire is an important process to help insure the survival and regeneration of whitebark pine. This species can survive surface fires which kill other tree species that compete with it. Since whitebark pine reproduces on fire prepared sites, stand replacing-fires help perpetuate the species. Historically, fire has occurred in whitebark pine communities every 30-300 years. Suppression of fire has favored subalpine fir and Engelmann spruce over whitebark pine. With continued absence of fire, the whitebark pine will likely give way to the spruce and fir.

Wildland fire use can be applied in management prescription 2.6.2 Grizzly Bear Core Area (see appendix D for clarification).

Wildland fire use can be utilized within the recovery zone if greater than 70% of the forested acres are comprised of vegetation that provide for security cover for the grizzly bear. Security cover is defined as forested acres (all tree species) which have not been managed in the last 20 years, and managed or burned forested acres which meet the following criteria:

Overstory Basal Area of trees 5.0"+	Understory Trees/acre 0-4.9" and 7'+	Acreage Multiplier
130+ sq. ft. per acre	250+	1.0 (good)
80-129 sq. ft. per acre	150-249	0.7 (medium)
30-79 sq. ft. per acre	50-149	0.4 (poor)

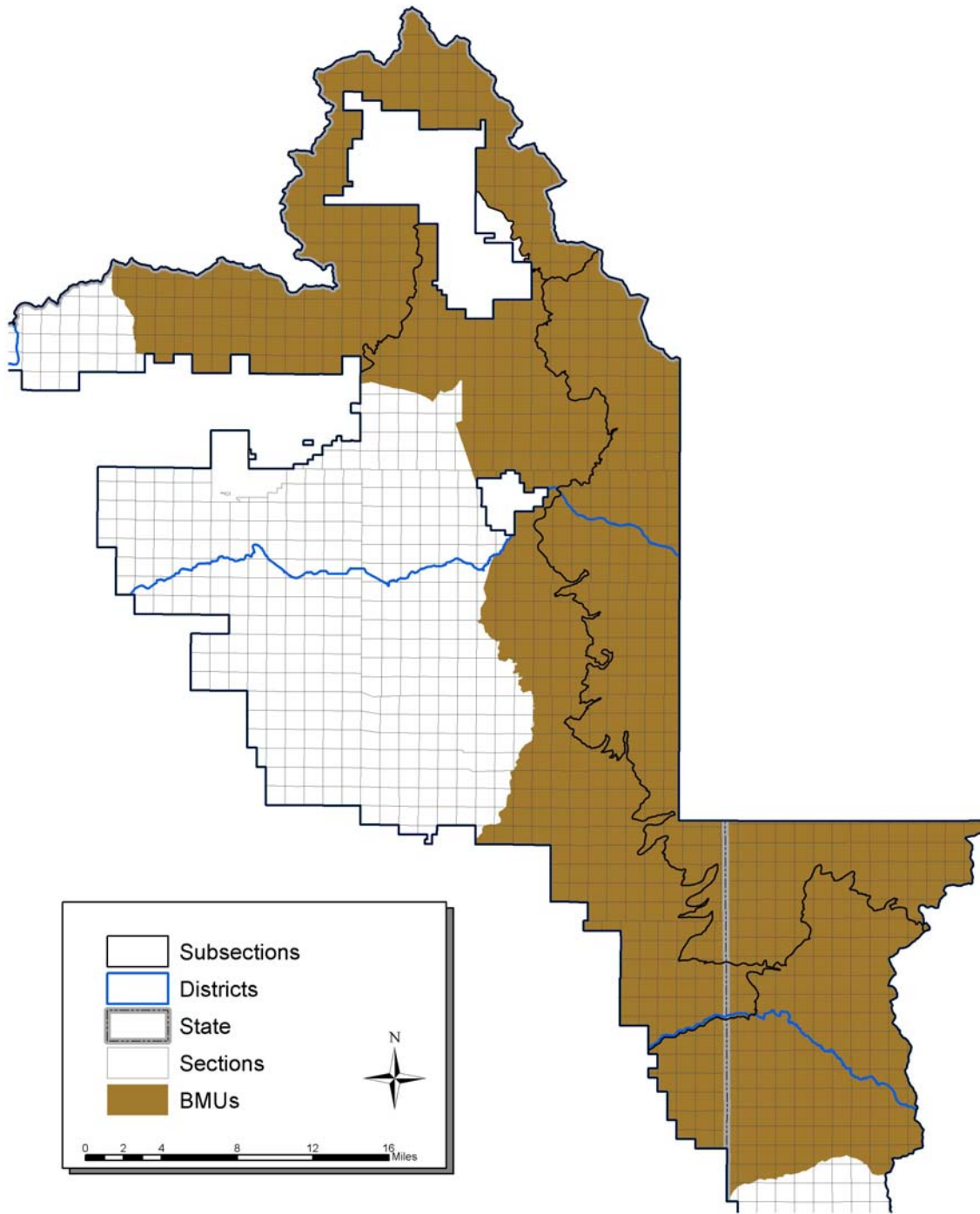
The overstory and understory categories for security cover are to be considered separately. A stand having either 130 sq. ft. basal area per acre or 250 understory trees per acre over seven feet tall would meet the requirements for full security cover. Both live and dead tree basal areas are used for overstory calculations.

The 70% security cover figure must be derived from an analysis area of at least 7000 acres in size.

### Guidelines

- Consult district or forest wildlife biologist: In the event of a designated WFU within the Grizzly Bear Recovery Zone, the Fire Use Manager will consult the district or forest wildlife biologist to determine if the candidate ignition is likely to achieve the objectives of improving or maintaining grizzly bear habitat.

Grizzly Bear Recovery Zone (Map 9)





## **Aquatic Influence Zones**

This prescription applies to the aquatic influence zone associated with lakes, reservoirs, ponds, perennial and intermittent streams, and wetlands (such as wet meadows, springs, seeps, and bogs). These areas control the hydrologic, geomorphic, and ecological processes that shape the various water types mentioned above and directly affect aquatic life. They also provide unique habitat characteristics, which are important to those plant and animal species that rely on aquatic, wetland, or riparian ecosystems for all or a portion of their life cycle. Many such habitats are locally rare or are sensitive to disturbance (such as fens and thermal springs). Overall, these areas serve as important reservoirs of biodiversity; critical linkages for the interchange of plant and animal genetic material; specialized areas of nutrient cycling and freshwater filtration, storage, and transport; and are important to water quality.

Management emphasis is directed at the application of ecological knowledge to restore and maintain the health of these areas in ways that also produce desired resource values, products, protection, restoration, enhancement, interpretation, and appreciation of these areas.

Fire Use is permitted under this management prescription utilizing the following guidelines

## **GUIDELINES**

- If a WFU is burning in a watershed having a 303(d) listed stream ("Water Quality Limited", or WQL), notify the Forest Hydrologist. The 303(d) list is updated every two years, and is provided to the Districts as it is updated.
- If a WFU is burning in a watershed having known soil and water conditions that may be adversely affected by fire, notify the Forest Soil Scientist or Hydrologist.
- Forest Plan guidelines state that no more than 30% of a watershed should be in a hydrologically disturbed condition at one time. Forest hydrologist will provide information on specific watersheds
- WFUs that may affect SNOTEL sites or public water supplies need to be reported to the appropriate entity: NRCS for SNOTEL sites, and Idaho Division of Environmental Quality for public water supplies.
- Avoid locating bases, camps, helibases, staging areas, helispots, hazardous material storage facilities, and other centers for incident activities within these lands. If the only suitable location for such activities is within this area, an exception may be granted following a review and recommendation by a resource advisor. The resource advisor will prescribe the location, use conditions, and rehabilitation requirements.
- Avoid application of chemical retardant, foam, or additives in these areas. Exceptions may be warranted in situations where overriding safety concerns exist, or following a review and recommendation by a resource advisor, when an escape would cause more long-term damage.

## GRAZING ALLOTMENTS

There are currently thirteen active grazing allotments entirely or partially within the boundaries of the MP&TR FMAs; 22 within the CR FMA; 22 within the LM FMA, 14 within the IP FMA, 13 within the CM FMA, and 17 within the BH FMA.. Information regarding individual grazing allotments is summarized in tables 8-14.

**Table 8. MP-FMA  
Grazing Allotments**

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Meadow Creek #2614	Cattle	500	175	2,715
Fall River Ridge #302	Cattle	741	3,590	25,850
Squirrel Meadows #303	Cattle	1,097	5,816	29,620

**Table 9. TR-FMA  
Grazing Allotments**

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Tepee Creek #509	Cattle	100	540	22,134
Canyon Badlands #519	Sheep	1,200	1,164	6,640
Darby Creek #501	Cattle	115	544	6,375
Dry Basin #523	Sheep	300	231	1,466
Fred's Mtn. #502	Cattle	50	148	2,706
Game Creek #503	Cattle	92	413	1,256
Leigh Cr. #504	Cattle	157	567	6,346
Mill Cr./Teton #506	Cattle	68	321	5,927
Moose Cr. #527	Sheep	1,100	902	24,437
Spring Cr. #508	Cattle	65	306	5,457

Table 10 CR FMA Grazing Allotments

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Antelope Creek #44005	C&H	105	148	700
Bagley #429	C&H	150	673	6,906
Conant Valley #40105	C&H	100	202	1,390
Fall Creek #40118	C&H	784	4,543	15,599
King Creek #40113	C&H	143	805	4853
Snake River #40110	C&H	623	3,783	19,350
Beaver-Commissary #44100	S&G	1,000	820	6,967
Brockman #40211	S&G	1,126	923	5,123
Camp Creek-White Springs #44004	S&G	1,000	840	6,851
Corral-Lava #44002	S&G	1,150	989	7,680
Currant-Deadman #40260	S&G	1,000	720	14,972
Elk Mtn #40276	S&G	1,800	120	5,458
Golden Gate #40223	S&G	1,000	720	7,822
Home Ridge-Red Peak #40215	S&G	1,200	912	13,689
Lone Pine #40238	S&G	1,500	310	2,245
Mahogany Ridge #40207	S&G	1,000	924	8,023
Point Lookout #40232	S&G	1,000	780	6,981
Poker Peak #40263	S&G	1,000	620	7,672
Russel-Van #44001	S&G	1,000	920	13,813
South Fork Bear Creek #40241	S&G	1,127	924	13,338
Trout Creek #40280	S&G	1,050	650	7,042
Williams Creek #40278	S&G	1,150	1,002	9,495

Table 11 LM FMA Grazing Allotments

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Burnt Canyon #00103	Cattle	108	100	812
Crystal Gulch #00105	Cattle	225	713	6,501
Eidelman Canyon #00109	Cattle	73	148	6,076
Grouse Canyon #00110	Cattle	108	428	10,162
Irving Creek #00112	Cattle	63	92	430
Jump Creek #00113	Cattle	10	66	1,193
Kyle Canyon #00114	Cattle	45	131	3,707
Medicine Lodge #00115	Cattle	1,341	8,329	30,885
Pass Creek #00118	Cattle	184	491	11,436
Slate Basin #00119	Cattle	72	238	3,654
Spring Canyon #00120	Cattle	250	250	14,408
Webber Creek #00122	Cattle	395	478	5,837
Willow Creek #00126	Cattle	143	502	16,245
Cedar Point / Eightmile #00127	Sheep	1,530	2,448	20,900
Nicholia / Chandler #00128	Sheep	1,200	1,084	35,997
Limestone / Irving Creek #00143	Sheep	1,200	716	11,810
Kelly Canyon #00144	Sheep	1,500	300	2,005
Mahogany/ #00147 Scott Canyons #00156	Sheep	Closed	Closed	18,755
Mammoth / Coal Kiln #00148	Cattle	250	660	15,965
Rocky Canyon #00154	Cattle	250	577	7,968
Snakey Canyon #00157	Sheep	1,500	450	3,814
Hahn Townsite #00166	Cattle	7	37	374



Table 12 IP FMA Grazing Allotments

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Meadow Cr. #02614	Cattle	500	1,050	2,642
Elk #00232	Cattle	47	186	328
Buffalo #00237	Cattle	4	18	64
Tom Cr. #00236	Cattle	65	172	384
Ripley Butte #00204	Cattle	400	1,795	17,684
Antelope Park #00200	Cattle	866	1,903	12,605
Davis Lake C&H #00202	Cattle	602	2,979	28,487
Fogg Butte C&H #00301	Cattle	414	1,858	17,038
Grandview C&H #00300	Cattle	736	3,497	40,718
Gerritt Meadow #00319	Cattle	200	884	802
Snake River Butte #00307	Sheep	1,000	908	18,525
Big Bend S&G #00304	Sheep	1,200	1,090	14,436
High Point S&G #00305	Sheep	1,200	1,090	13,991
Driveway Wells #00306	Sheep	Vacant		13,176

Table 13 CM FMA Grazing Allotments

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
High Five #00203	Cattle	630	2,080	20,737
Meyers Creek #00225	Sheep	990	594	3,503
Icehouse/Willow Cr #00223	Sheep	1,070	645	8,525
Blue Creek #00217	Sheep	Vacant	0	4,310
Hotel Creek #00222	Sheep	Vacant	0	4,471
Coffeepot #00219	Sheep	Vacant	0	6,877
Sawtelle #00227	Sheep	Vacant	0	8,891
Bootjack #00201	Cattle	375	658	10,720
West Lake #00206	Cattle	292	1,349	7,723
Red Rock #00233	Cattle	19	25	61
Meadow View #00234	Cattle	Vacant	0	48
Twin Creek #00205	Cattle	Vacant	0	-----
Garner Canyon #00235	Cattle	28	18	50

Table 14 BH FMA Grazing Allotments

Allotment Name and Number	Allotment Type	Livestock Number	AUM's	Total Acres
Burns Canyon #401	Cattle	27	154	1,331
Dry Canyon/Pine Creek #403	Cattle	120	202	1,390
Indian Creek #404	Cattle	150	541	4,151
Moody South Fork #405	Cattle	910	5,418	27,503
Palisades-Elk #406	Cattle	160	753	4,938
Rainey Creek #407	Cattle	144	805	3,815
South Fork #40410	Cattle	25	92	237
Austin Canyon #412	Sheep	1,050	798	23,400
Big Basin-South Elk #44003	Sheep	1,200	1,104	19,770
Burbank #431	Sheep	1,050	903	19,560
Dog Creek #416	Sheep	1,050	998	20,120
Grand Blowout #44006	Sheep	1,000	830	16,246
Grand Valley #420	Sheep	2,100	420	1,200
Palisades #422	Sheep	1,050	840	14,154
South Indian-Cottonwood #426	Sheep	1,150	1001	20,245
Spencer-Wolf #421	Sheep	1,150	1,001	23,240
West Pine Creek #418	Sheep	1,100	946	10,240

#### Guidelines

- Range Permittees must be notified at the start of the fire. If necessary they may need to relocate their stock to a safer location. The development of the Maximum Manageable Area for Fire Use projects during Stage III analysis should consider the impact to permittees.

## SOILS

### *MP-FMA*

The Madison-Pitchstone Plateaus subsection consists of a large consolidated ash flow that came out of Yellowstone National Park and overtopped the east rim of the Island Park Caldera. The landscape is dissected by dendritic and parallel drainage systems.

The soils in the northern part of the subsection are greater than 60 inches to bedrock, having medium textured surface layers and stratified gravelly coarse textured to extremely gravelly coarse textured subsurface layers. The soils in the southern part of the subsection are greater than 60 inches to bedrock, having gravelly medium textured surface layers and very gravelly to extremely cobbly medium textured subsurface layers. These soils have a moderately low inherent fertility, are droughty and have windthrow hazards. They are highly erodible if the subsoil is exposed, as it is in the northern part of the subsection due to the North Fork Fire.

A principal ecological concern affecting soil quality (southern portion) is the susceptibility to fires, increasing the risk of losses in soil productivity associated with such events, including areas on the 1988 North Fork Burn that have not recovered yet.

Principal management activities affecting soil quality include OHV use, dispersed recreation, effects associated with timber harvest which have resulted in roads, compaction, organic matter removal or displacement and loss of woody residue.

Four landtype associations occur within the Madison-Pitchstone Plateaus subsection: 1) 401--Northern Madison Plateau - Conifer Forest, 2) 402--Southern Madison Plateau - Conifer Forest, 3) 403-- Falls River Basin - Conifer Forest, and 4) 404--Eastern Falls River Basin - Conifer Forest. Descriptions of these landtype associations are located in Appendix A and Map 10.

### *TR-FMA*

North-south trending mountain range. The dominant rock types are granite, limestone, sandstone, dolomite, slate, gneiss and quartzite. The landscape is dissected by parallel drainage systems.

This subsection consists of two primary landscape settings. These include foothills on lower to mid elevations and mountain side-slopes at mid to high elevations. Soils on these landscapes are 40 to greater than 60 inches to bedrock, having nongravelly to very gravelly medium textured surface layers and gravelly to extremely stony medium textured subsurface layers. These soils have low to moderately low inherent fertility, low to moderate compaction hazard, moderate to high erosion hazard, reforestation concerns and low to high mass instability hazards.

Principal ecological concerns affecting soil quality in this subsection include conifer expansion into aspen, sagebrush/grass, riparian and mountain meadow communities causing site changes, and the area's susceptibility to fires with increased risk of losses in soil productivity associated with such events.

Three landtype associations occur within the Teton Range subsection: 1) 501--Teton Foothills - Conifer Forest, 2) 502-- Teton Mountains - Conifer Forest, and 3) 503--Teton Range Crest - Alpine. Descriptions of these landtype associations are located in Appendix A and Map 11.

## CR FMA

The Caribou Range Mountains Subsection is a southwest to northwest trending overthrust (multiple faults) mountain range. The northeast side of the range is moderate relief mountains on mixed sediments. The southwest side of the range is low relief foothills and basins on fine textured marine sediments. The dominant rock types are a mix of sedimentary materials with a loess influence. The landscape is dissected by dendritic drainage systems.

Soils on these landscapes are greater than 60 inches to bedrock, having medium textured surface layers and moderately-coarse to fine textured subsurface layers. These soils have a moderate to high inherent fertility, moderate compaction and rutting hazard, moderate to high erosion hazard, moderate to high slumping and earthflow hazard, plant competition concerns and areas of low bearing strength.

Principal ecological concerns affecting soil quality include conifer expansion into aspen, sagebrush/grass, riparian and mountain meadow communities causing site changes, increased risk of losses in soil productivity associated with fire events, and canopy density of sagebrush communities and subsequent loss of understory vegetation resulting in a decline in watershed conditions and slumping earthflows.

Principal management activities affecting soil quality include roads, OHV use, dispersed recreation and grazing along drainages. Secondary management activities affecting soil quality includes erosion along sheep driveways and effects from timber harvest.

Three landtype associations occur within the Caribou Range Mountains subsection: 1) 701-- High Caribou Mountains-Conifer Forest and 2) 702-- Low Caribou Mountains-Shrub Steppe. . Descriptions of these landtype associations are located in Appendix A. and Map 12.

## LM FMA

*Lemhi/Medicine Lodge* - This subsection consists of fault block mountains, which exhibit a northwest-southeast trend. The dominant rock types are limestone and sandstone. The landscape is dissected by parallel drainage systems.

Soils on these landscapes are greater than 60 inches to bedrock, having gravelly medium textured surface layers and extremely gravelly medium textured subsurface layers. These soils have a low to moderate inherent fertility, are droughty, are high in carbonates and have a high erosion hazard.

Principal ecological concerns affecting soil quality in the subsection are as follows: the expansion of conifers into sagebrush/grass and riparian communities has changed some sites, the area's susceptibility to fires has increased the risk of losses in soil productivity associated with such events and canopy density of sagebrush communities and subsequent loss of understory vegetation has led to declining watershed conditions.

The principal management activities affecting soil quality are roads, grazing concerns along incised drainages and OHV use. Secondary management activities affecting soil quality include water developments and mining impacts which have not been reclaimed.

Two landtype associations occur within the Lemhi-Medicine Lodge subsection: 1) 101 Lemhi-Medicine Lodge Fans-Shrub Steppe, 2) 102 Lemhi-Medicine Lodge Mountains-Conifer Forest.

Description of these landtype associations are located in Appendix A and Map 13.

*IP-FMA*

Island Park-The Island Park Caldera was formed by the collapse of a rhyolite shield volcano. After the collapsing of the caldera, volcanic activity continued, resulting in basalt flows covering much of the caldera floor. The entire subsection has been overlain by wind blown silts (loess). The dominant rock types are rhyolite and basalt. The landscape is dissected by dendritic and parallel drainage systems on the caldera rim and associated tablelands. The caldera floor has very little dissection.

Soils on these landscapes are greater than 60 inches to bedrock, having nongravelly to gravelly medium textured surface layers and medium fine to extremely cobbly medium textured subsurface layers. These soils have a moderately low to moderate inherent fertility. Soils on the caldera floor have plant competition concerns on deeper soils, reforestation concerns on more shallow soils, and moderate susceptibility to compaction. Soils on the caldera rim have a moderate susceptibility to compaction, moderate to high erosion hazard, low bearing strength and plant competition concerns.

A principal ecological concern affecting soil quality (limited to the caldera rim) is the expansion of conifers into aspen, sagebrush/grass, riparian and mountain meadow communities and resulting site changes and landscape patterns on structure and composition.

Principal management activities affecting soil quality (caldera rim) are roads, OHV use, and extensive past timber/firewood harvest which have resulted in roads, compaction, organic matter removal or displacement and loss of woody residue. Principal management activities (caldera floor) are the same as for the rim, plus dispersed recreation, which is especially heavy near summer home areas, and grazing along certain riparian areas and meadow complexes.

Three landtype associations occur within the Island Park subsection: 1) 301-Island Park Plains and Falls River Tablelands-Conifer Forest, 2) 302-Island Park Tablelands-Conifer Forest, 3) 303-Island Park Rim-Conifer Forest. Description of these landtype associations are located in Appendix A and Map 14

*CM-FMA*

Centennial Mountains- This subsection consists of a fault block mountain range, which exhibits an east-west trend along the Continental Divide. The dominant rock types are rhyolite, sandstone and shale. The landscape is dissected by dendritic and parallel drainage systems.

Soils on these landscapes are greater than 60 inches to bedrock, having nongravelly to gravelly medium to medium-fine textured surface layers and gravelly to extremely stony medium to medium-fine subsurface layers. These soils have a moderate to moderately high inherent fertility, are susceptible to compaction and puddling, have a moderate to high erosion hazard, exhibit plant competition concerns and demonstrate slumping hazards on mountain side-slopes and escarpments at higher elevations.

Principal ecological concerns affecting soil quality include conifers expanding into aspen, sagebrush/grass, riparian and mountain meadow communities causing site changes; increased risk of losses in soil productivity associated with fire events; canopy density of sagebrush communities and subsequent loss of understory vegetation which is causing declining watershed conditions; and slumping potentials.

Principal management activities that are concerns affecting soil quality include roads and OHV use, dispersed recreation impacts, grazing concerns along drainages and water developments.

Secondary management activities that are affecting soil quality include mining impacts which have not been reclaimed, past timber/firewood harvest which have resulted in roads, compaction, organic matter removal or displacement and loss of woody residue.

Three landtype associations occur within the Centennial Mountain subsection: 1) 201-Beaverhead and Centennial Mountains- Shrub Steppe, 2) 202-Beaverhead and Centennial Mountains- Conifer Forest, 3) 203 -Centennial Mountains and Henrys Lake Mountains-Conifer Forest. Description of these landtype associations are located in Appendix A and Map 15

#### *BH-FMA*

Big Hole Mountains-This subsection consists of a mountain range of multiple, parallel overthrusts (faults) and benches of mixed rocks and eolian material that have been modified by thrust faulting.

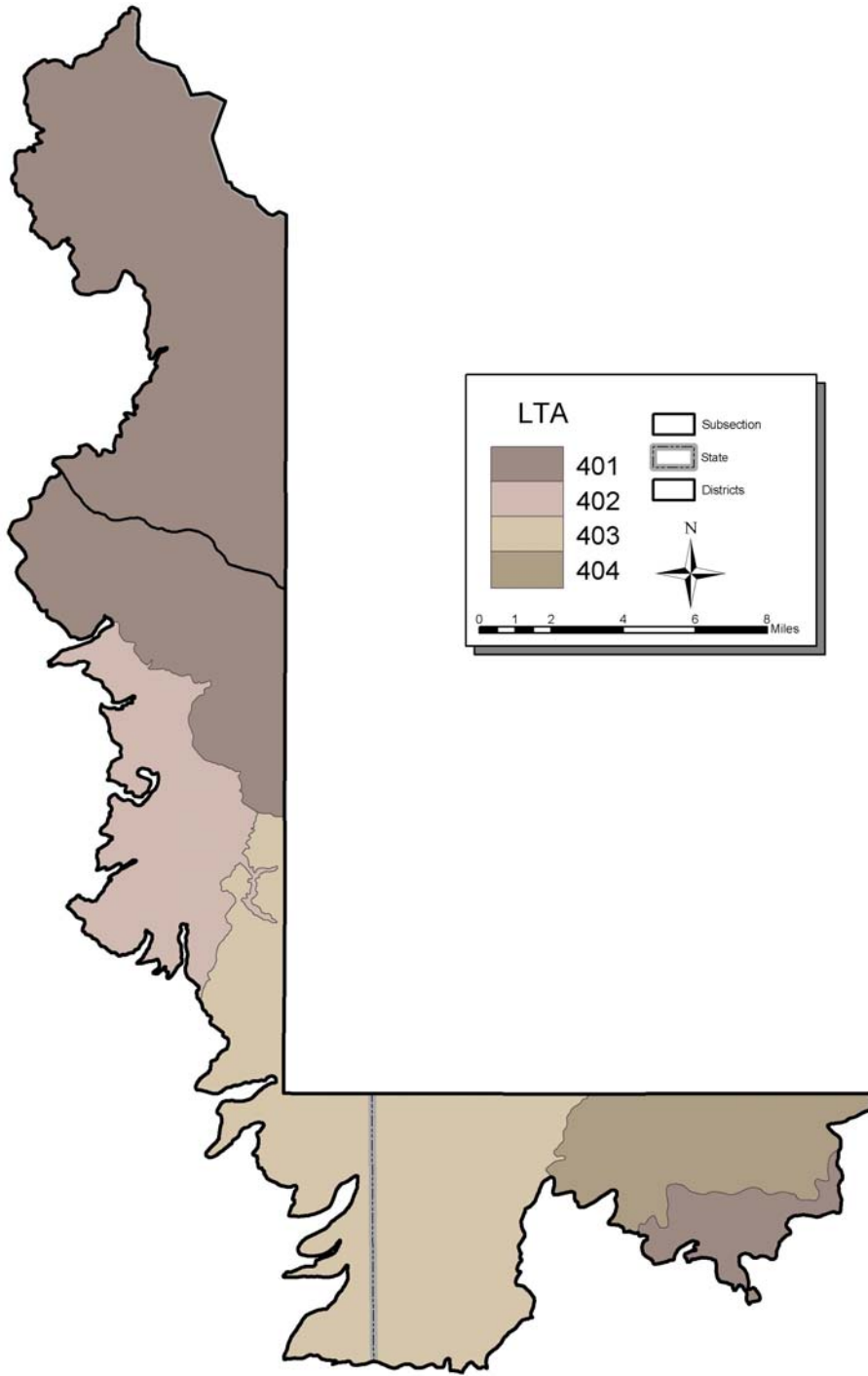
Soils on these landscapes are greater than 60 inches to bedrock, having gravelly medium textured surface layers and very gravelly moderately coarse to moderately fine textured subsurface layers. These soils have a moderate to high inherent fertility, moderate compaction and rutting hazard, moderate to high erosion hazard, moderate to high slumping and earthflow hazard, plant competition concerns and areas of low bearing strength.

Principal ecological concerns affecting soil quality include conifer expansion into aspen, sagebrush/grass, riparian and mountain meadow communities causing site changes, increased risk of losses in soil productivity associated with fire events, canopy density of sagebrush communities and subsequent declining watershed conditions and slumping/earth flows.

Principal management activities affecting soil quality are roads, OHV use, dispersed recreation and grazing along drainages. Secondary management activities affecting soil quality include erosion along sheep driveways, effects resulting from timber harvest and big game feeding areas along Rainey Creek.

Three landtype associations occur within the Big Hole subsection: 1) 601-Low Snake River Mountains-Conifer Forest, 2) 602-High Snake River Mountains-Conifer Forest, 3) 603-Big Hole Foothills-Conifer Forest. Description of these landtype associations are located in Appendix A and Map 16.

LTA Map Madison Pitchstone- (Map 10)

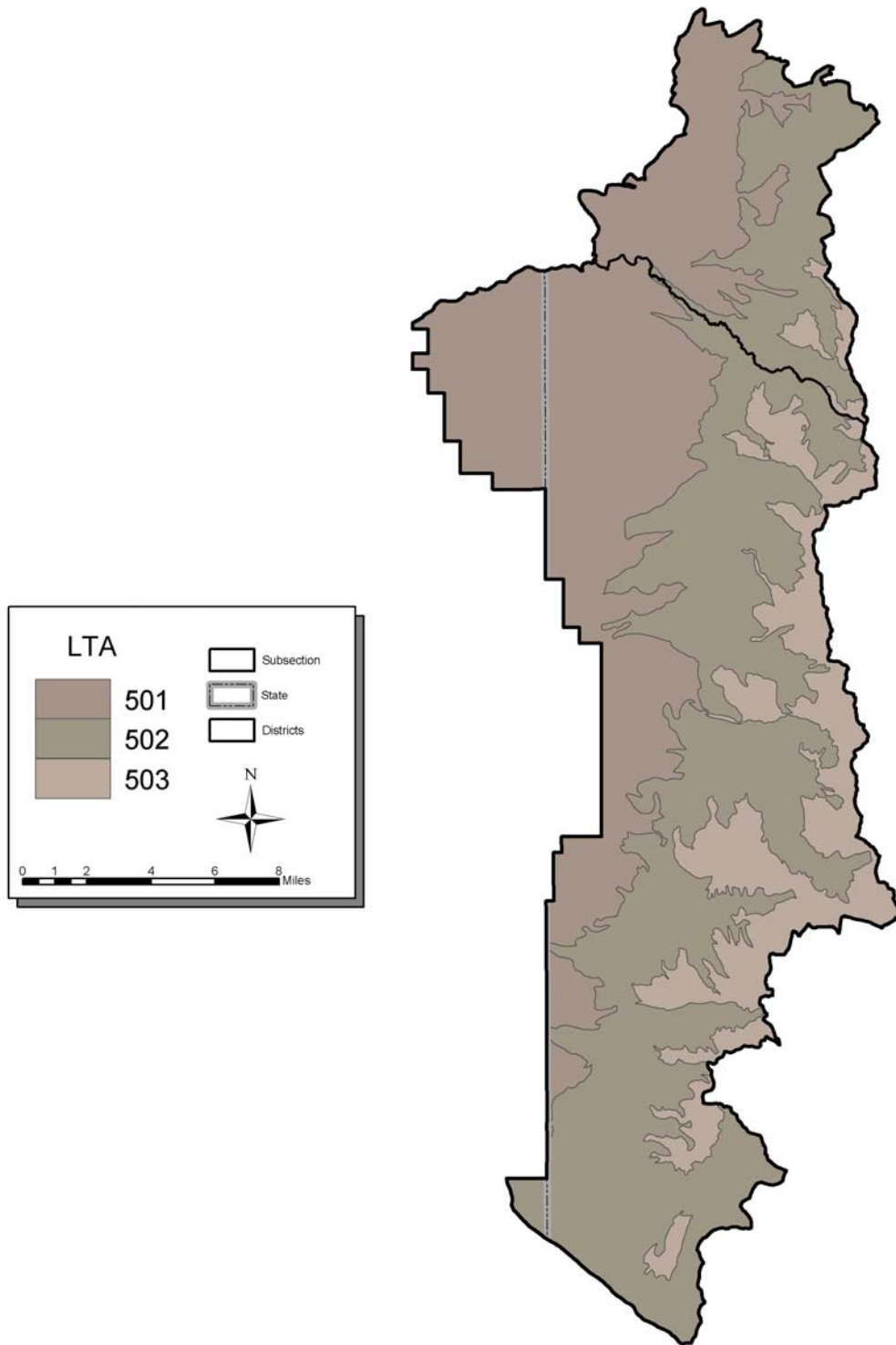




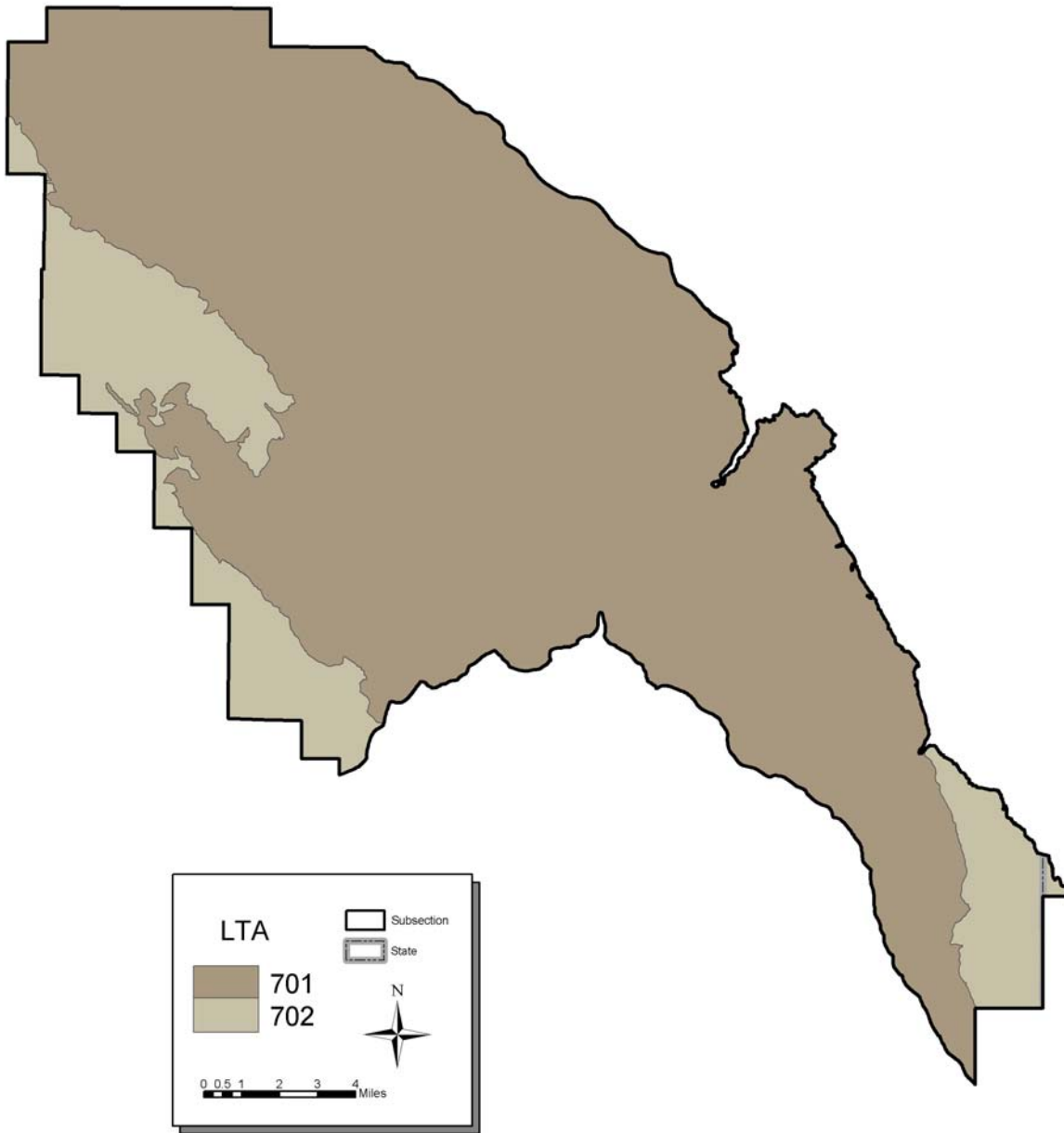




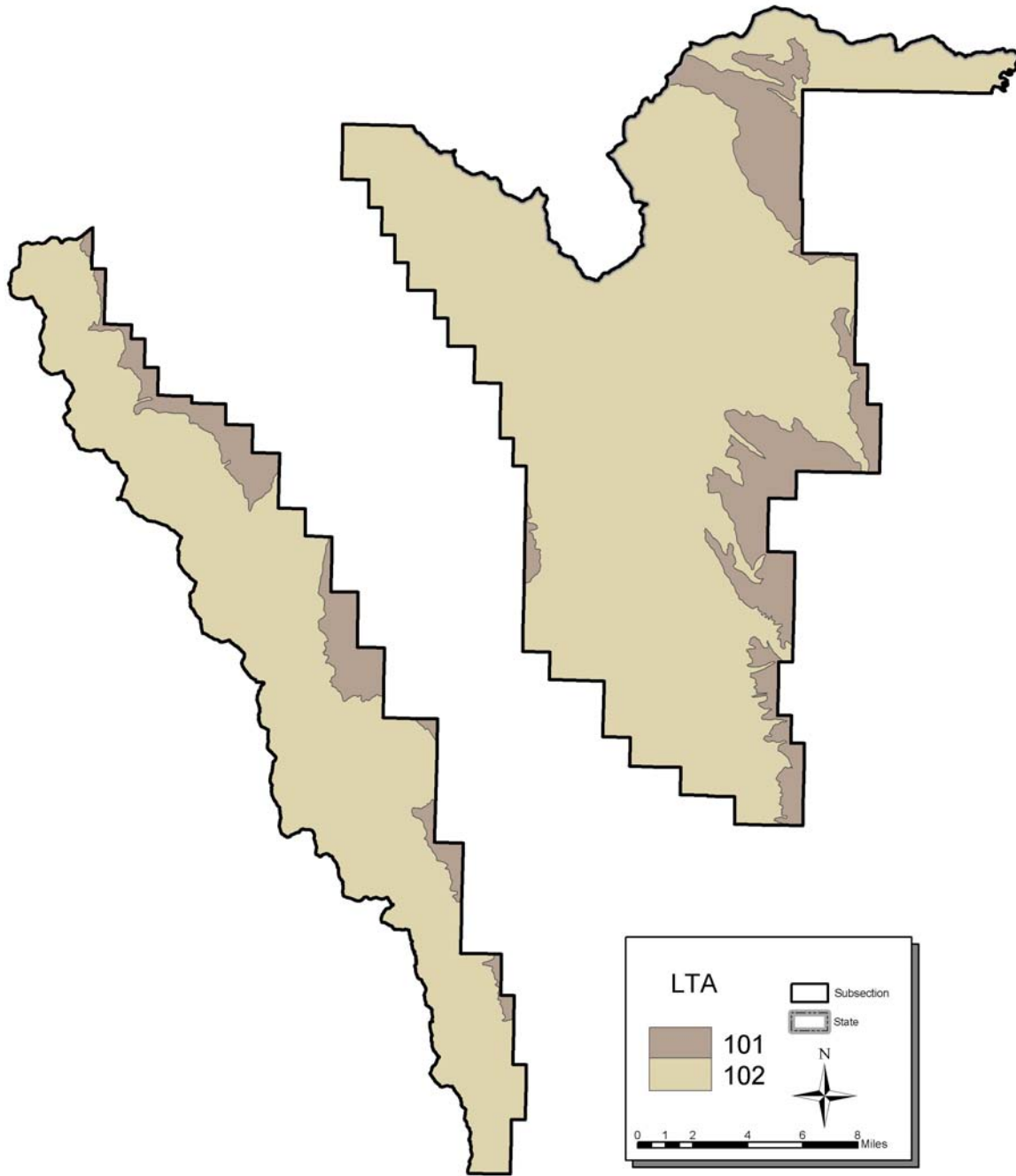
LTA Map Teton Range (Map 11)



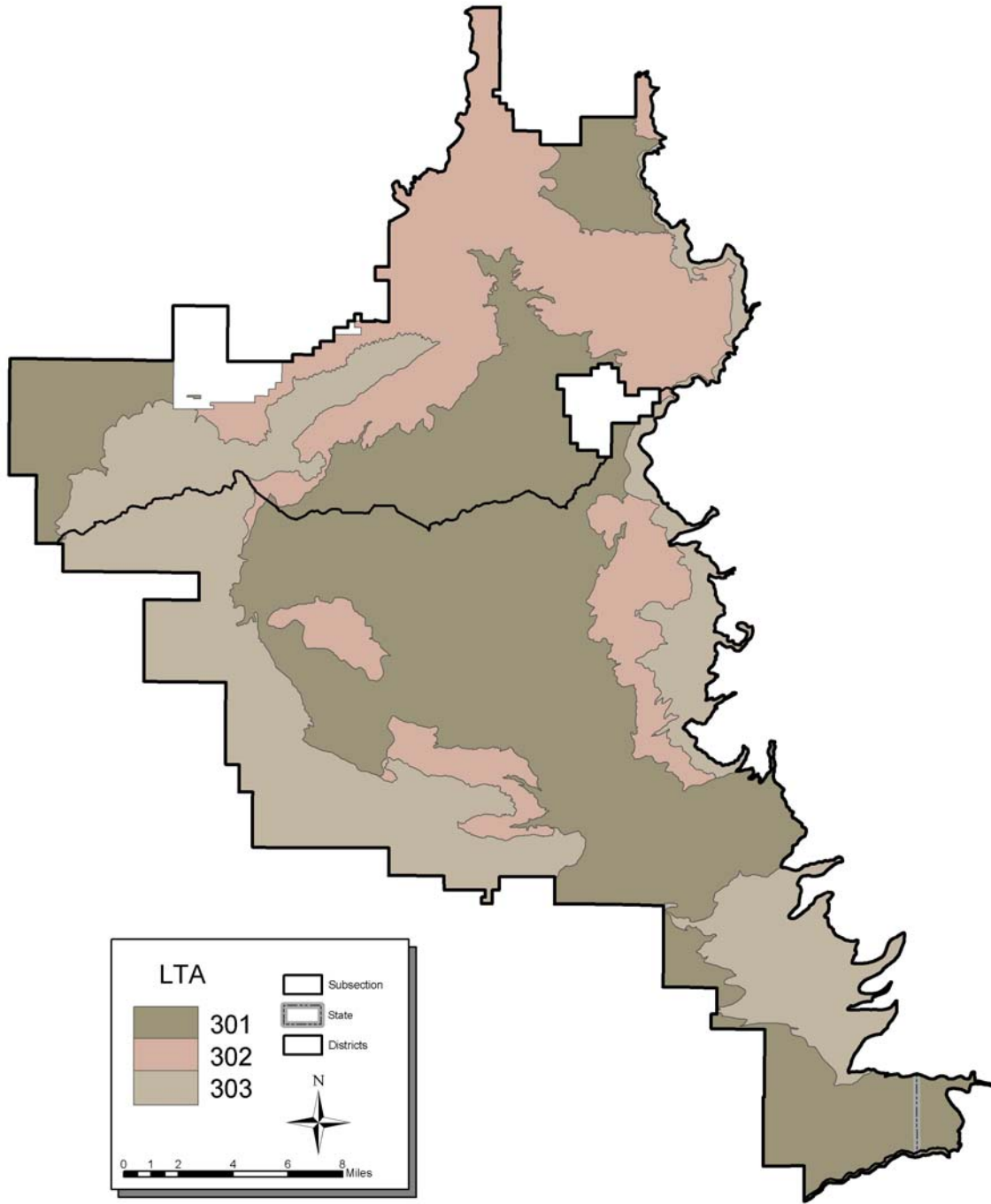
**LTA Map Caribou Range Mountains (Map 12)**



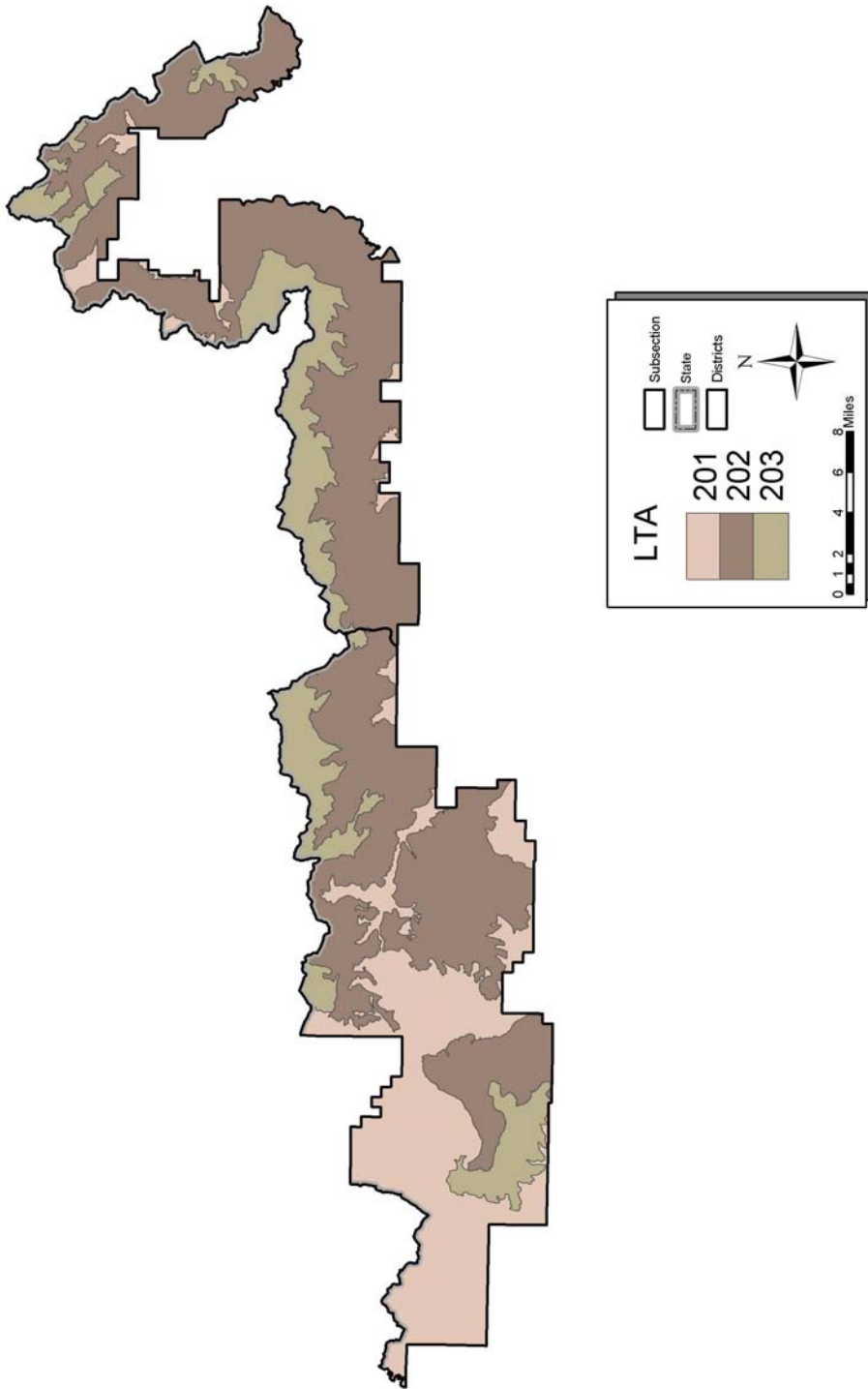
LTA Map Lemhi/Medicine Lodge (Map 13)



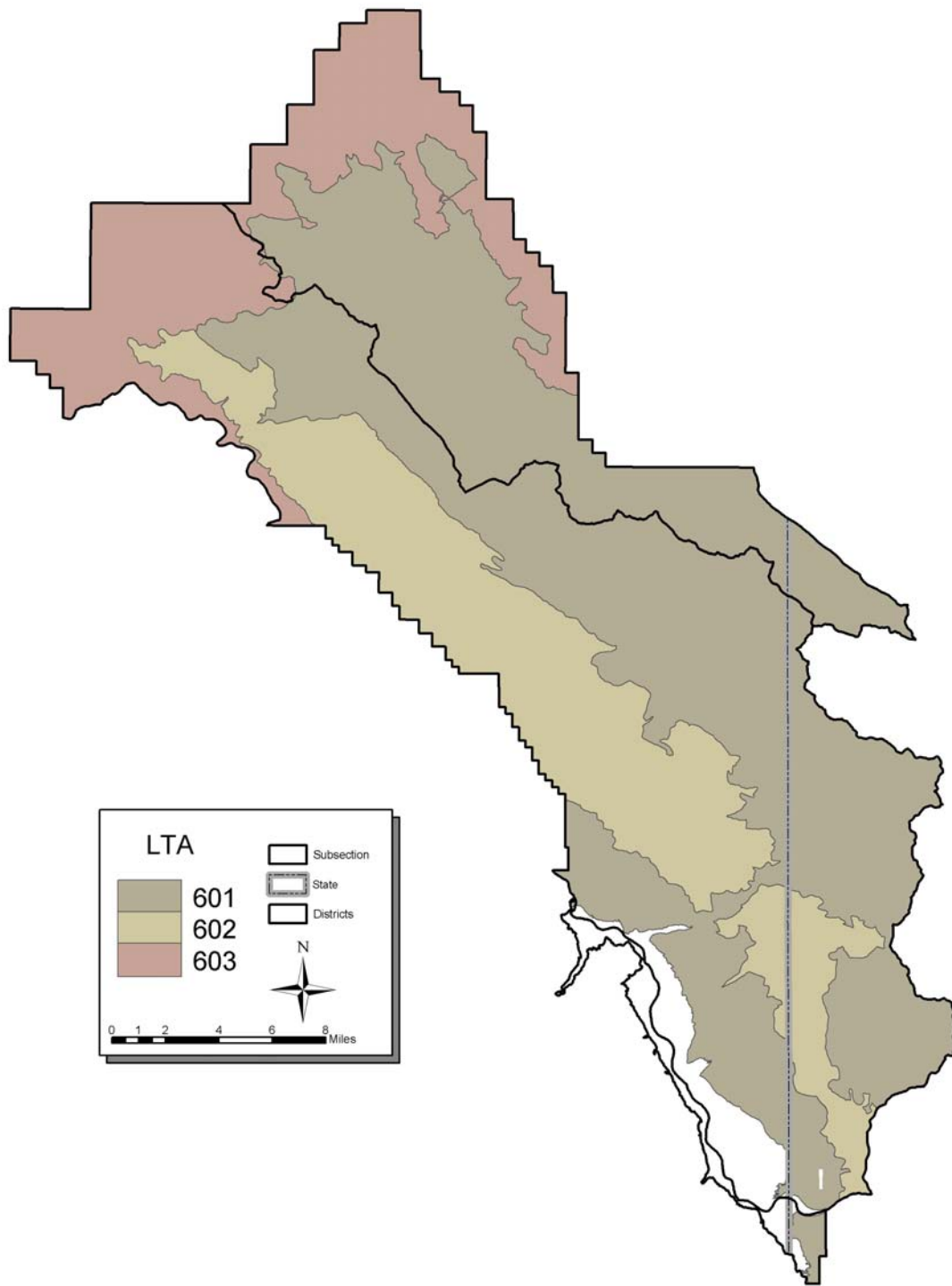
LTA Map Island Park (Map 14)



LTA Map Centennial Mountains (Map 15)



LTA Map Big Hole Mountains Subsection (Map 16)





## Research Natural Areas (RNAs)

Fire Management Direction for Existing and Proposed Research Natural Areas on the Targhee National Forest

There are nine existing and three proposed Research Natural Areas (RNAs) on the Targhee National Forest. The MP-FMA contains one established RNA (Moose Creek Plateau) and 2 proposed RNAs (Rock Lake and Wyoming Creek). The TR-FMA contains no RNAs. The CR-FMA contains no RNAs. The LM-FMA contains four established RNAs (Meadow Canyon, Copper Mtn., Webber Creek, and Sheep Mtn.) The IP-FMA contains two established RNAs (Thurman Creek and Willow Creek) and one proposed RNA (Sheep Falls). The CM-FMA contains one RNA (Targhee Creek). The BH-FMA contains one established RNA (Burns Canyon). The existing RNAs are in Prescription Area 2.2 of the 1997 Revised Forest Plan (RFP) for the Targhee National Forest. There is no existing Prescription Area for proposed RNAs. RNAs are important ecological or natural areas established for non-manipulative research, education, or to maintain natural diversity on National Forest system lands. They also may assist in carrying out provisions of special acts, such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act. RNAs are good examples of physical or biological units in which current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural, physical and biological processes to prevail without human intervention.

**Table 15 Existing and Proposed Research Natural Areas within the MP& TR-FMAs**

Area Name	Year Established	Ranger District	Size/Acres	Area Features
Moose Creek Plateau	1991	Island Park	440 acres	Obsidian sands, lodgepole pine
Wyoming Creek	Proposed	Ashton	401 /1	Willow, meadow
Rock Lake	Proposed	Ashton	300 /2	Meadow, lake lilly pads
Meadow Canyon*	1981	Dubois	3880/1	Alpine Tundra, Rare Plants
Copper Mtn.	1987	Dubois	550	Alpine Grassland
Webber Creek	1988	Dubois	2245/1	High Mtn. Grassland
Sheep Mtn. **	1996	Dubois	1542	Alpine Vegetation
Targhee Creek	1996	Island Park	2640	Alpine Vegetation
Burns Canyon	1996	Palisades	490	Geology, Variety of Vegetation
Thurman Creek	1991	Island Park	330	Spring fed streams
Willow Creek	1987	Ashton	1100	Aspen, limber pine, mtn. maple
Sheep Falls	Proposed	Ashton	300/1	Waterfall, lodgepole pine

/1 Approximate acres, Prescription Area 2.1.1

/2 Approximate acres, Prescription Area 1.1.6

\* Targhee N.F. = 3,595 acres, Challis N.F. = 285 acres

\*\* Targhee N.F. = 6 acres, Salmon N.F. = 822 acres, Challis N.F. 714 acres

Forestwide direction for the management of existing RNAs (Prescription Area 2.2) on the Targhee National Forest is found on pages III-83 through III-85 of the 1997 Revised Forest Plan (RFP). There is no forestwide direction for the management of proposed RNAs in the RFP. Also, there is no forestwide direction for fire management activities identified in Prescription Area 2.2. Management direction for proposed RNAs is located under the specific direction for the Prescription Areas where each proposed RNA is located. In addition to the direction identified in the RFP additional direction is found in FSM 4063 and the Establishment Records for each RNA. A summary of fire management direction for each RNA is located in Appendix B. Should conflicting direction for fire management activities (human or natural ignitions), be identified; the protocol for the management of fire activities will be as follows:

- Direction identified in the Establishment Records for existing RNAs, will take priority over all other direction for those RNAs.
- If direction does not exist in the Establishment Records for existing RNAs, direction in FSM 4063 will take priority.
- Direction does not exist for proposed RNAs in either the RFP or FSM 4063. Direction identified in the specific Prescription Areas where the proposed RNAs are located and Forest wide S&G's will be followed.
- If direction does not exist for proposed RNAs in the RFP Prescription Areas; then all human or natural ignitions will be extinguished as quickly as possible using means that will cause minimal damage and the Forestwide S&G's on page III-6 of the RFP will be followed.

## Timber Management

### Management Prescriptions 5.1, 5.1.3, 5.1.4:

The primary emphasis for these prescriptions is on scheduled wood-fiber production and use. Goals are to manage the lands to promote the production of commodity and noncommodity resources. The prescriptions also contain goals to “establish fire protection objectives for the area and desired fuel conditions” and to have fire management strategies which “emphasize preservation and protection of timber and range values scheduled for current use.” The guidelines for fire/fuels state that “wildfires will normally be suppressed” and that “prescribed fire may be used to reduce fuel loading; obtain natural regeneration; improve livestock forage conditions; for wildlife habitat improvement; and for other purposes that meet the needs of this prescription.” There are no standards that apply to fire/fuels and nothing specifically addresses managed natural fire or wildland fire use. (RFP III-136)

Since the prescription direction does not prohibit managed natural fire or wildland fire use, it can be applied in this prescription area as described in the clarification letter located in **appendix D**.

Specific timber projects scheduled for current use and located within designated wildland fire use areas are described in the Protection Considerations section. These projects represent significant capital investment and appropriate protection strategies apply.

### Guidelines

- If identified timber projects are located within or adjacent to the allowable burn area, contact the District resource specialist responsible for timber management to help determine protection strategy.



## ***SMOKE AND AIR QUALITY***

During the average fire season, unstable summer time air combined with prevailing southwest winds provide good smoke dispersal in the FMAs. For the MP-TR FMAs, these conditions will typically push the smoke northeast towards Yellowstone and Grand Teton National Parks, Teton Wilderness. The aforementioned areas are Class I airsheds and air quality will be monitored throughout the burning season. Smoke from the CR and LM FMAs will also typically move from southwest to northeast.

Towns and recreation areas to the south and west of the subsections are less likely to be affected by smoke although late summer and early fall night time conditions could allow inversions to drain smoke westerly towards the town of Driggs, Victor, Island Park, Spencer, Dubois, Swan Valley, Irwin, Alpine and other communities in the areas surrounding the Fire Management Areas.

The Environmental Protection Agency (EPA) recently set policy which does not excuse wildland prescribed fires from exceeding National Ambient Air Quality Standards (NAAQS) for PM-10 (particulate matter having a nominal aerodynamic diameter less than or equal to 10 microns)(EPA 1996). Even more recently, the EPA issued standards for PM 2.5 and ozone to take effect September 1997 (USDA 1997). The EPA will develop broader guidance in the near future to address issues raised by smoke emissions from wildland prescribed fires and other policy issues surrounding prevention of significant deterioration, conformity, visibility protection programs and regional haze.

The Targhee National Forest is a member of the Montana/Idaho State Airshed Group. At this time the Montana/Idaho State Airshed Group Operations Guide has no operating procedures or provisions for wildland fire use (WFU). However, the website for the above airshed group (<http://www.smokemu.org>) should be consulted for identified WFU levels. These levels will summarize and map predicted air quality data and provide input for Go/No Go decision-making regarding smoke impacts. *Currently, a permit is not required for WFUs originating in Idaho.*

For prescribed fire activities, the Montana/Idaho State Airshed Group will monitor air quality in the Idaho portion of the subsections. Between September 1 and November 31, burners belonging to the airshed group are required to notify the airshed coordinator (EIIFC Center Manager) at Eastern Idaho Interagency Fire Center by 10 a.m. the day prior to burning. The coordinator will determine the go/no go status of burning in relation to smoke issues. Burn permits are required for all prescribed fires. Although the PM 2.5 standards are under review, the Airshed group will continue to monitor them for air quality.

The monitoring unit for Wyoming portions of the subsections will be the Wyoming Department of Environmental Quality, Division of Air Quality (WDEQ/AQD). WDEQ/AQD requires a burn permit for prescribed fire. Requests for permits are made to: Mark Arn at [marn@missc.state.wy.us](mailto:marn@missc.state.wy.us). He can also be reached by phone at: (307) 777-7391 or by fax at (307) 777-5616. Permits will be issued within a week of notice and remain valid for one year from the date they are issued. WDEQ/AQD requires 24-hour notification prior to each burn. At this time there is no closed burn season in effect and burn permits may be acquired any time of the year. *Currently, permits are not required for WFU.* Air quality standards for Wyoming are PM 2.5 and will be monitored by WDEQ/AQD.

It is anticipated that air quality restrictions concerning WFU may change. As new regulations are enacted, the Madison-Pitchstone Teton Range Wildland Fire Use Guidebook will be modified to assure compliance with new policy and regulations.

## FUEL TREATMENTS

Prescribed fires are permitted within most management prescriptions in the included-FMAs as a method to treat areas of unnatural fuels build up and to restore fire's ecological role in the Forest. Within these subsections, fuel treatments may be necessary to effect reductions in both naturally occurring fuels and hazardous fuel accumulations resulting from resource management, fire exclusion, and land use activities.

Objectives of these fuel treatment measures include:

- Mitigation of risks to firefighter and public safety
- Reduce the risk to private property, administrative sites, bridges, etc.
- Reduce, to an acceptable level, the risks and consequences of wildland fire within the FMAs.
- Reduce the risk of wildland fire escaping from the MP & TR-FMAs.
- Increase the opportunity for natural fire to play its role on the landscape within the FMAs.

Acceptable fuel treatments are:

1. Prescribed fire and/or mechanical manipulation of fuels outside the wilderness boundary.
2. Prescribed fire to treat fuels within the wilderness boundary.
3. Utilize fire within wilderness to achieve objectives of holding and/or contingency strategies in wildland fire implementation plans.

The objectives are to reduce hazardous fuel accumulations, particularly around developments and boundary areas. Treating hazardous fuels may also reduce the risk and consequences of a wildfire escaping the FMAs.

The use of prescribed fire within and/or outside the wilderness prior to Wildland Fire Use event will occur on a project by project basis. Appropriate public scoping and involvement, consideration evaluation by an interdisciplinary team, environmental analysis, and decision document are necessary prior to project implementation. Prescribed fires may be utilized in wilderness to reduce unnatural buildup of fuels when wilderness fire management objectives set forth in FSM 2324.21 can be met and **all** of the following conditions are satisfied.

- The use of prescribed fire or other fuel treatment measures outside of wilderness is not sufficient to achieve fire management objectives within wilderness.
- An interdisciplinary team of resource specialists have evaluated and recommended the proposed use of fire.
- The interested public has been involved appropriately in the decision.
- Lightning-caused fires cannot be allowed to burn because they pose serious threats to life and/or public property within wilderness or to life, property, or natural resources outside of wilderness.

Do not use prescribed fire in wilderness to benefit wildlife, maintain vegetative types, improve forage production, or enhance other resource values. Although these additional effects may result from a decision to use prescribed fire, use fire in wilderness only to meet wilderness fire management objectives (FSM 2324.22).

## FIRE HISTORY

The average fire season in the FMAs begins in early July and ends sometime between early September and late October depending on early snowstorms. It is not unusual for an early snow storm to cause a presumed season ending event, only to be followed by two or three weeks of drying and warm temperatures causing a short return to fire season.

**MP-FMA** Based on fire records from 1970 to 2003, 58 lightning caused fires have burned within the MP-FMA. Twelve of these fires attained a size greater than one acre. The largest lightning caused fire for this time period consumed 598 acres. The largest fire to burn in the Madison-Pitchstone Plateaus subsection was the North Fork Fire in 1988. This was a human-caused fire that burned a total of 406,359 acres. 17,700 acres of the North Fork Fire burned within the Madison-Pitchstone Plateaus. During the same time period, a total of 31 human caused fires have burned, six exceeding one acre in size.

**TR-FMA** From 1970 to 2003, 83 lightning fires have burned within the TR-FMA. Six of these fires exceeded 1 acre in size with the largest fire attaining a size of 25 acres. During the same time period 43 human-caused fires have burned within the subsection. The largest of these attained a size of 51 acres.

**CR-FMA** From 1970 to 2003, 73 lightning fires have burned within the CR-FMA. 17 of these fires exceeded  $\frac{1}{4}$  acre. The largest fire to burn in the CR-FMA during this time period was the Alpine 2 fire in 2001. This fire attained a size of 475 acres. During the same time period 20 human-caused fires have burned within the subsection with the largest attaining a size of 152 acres.

**LM-FMA** Based on fire records from 1970 to 2003, 42 lightning caused fires have burned within the LM-FMA. Three of these fires attained a size greater than one acre. The largest lightning caused fire for this time period was the Gallagher Peak fire in 1979. This fire burned a total of 73,000 acres. During the same time period 20 human-caused fires have burned within the subsection. The largest human-caused fire for this time period consumed 541 acres.

**IP-FMA** From 1979-2003 there were 112 lightning caused fires within the subsection. Twenty three fires exceeded one acre in size with the largest being 385 acres. During the same time period there were 197 human caused fires. Seventeen of these exceeded one acre in size with the largest being 120 acres.

**CM-FMA** Based on fire records from 1970-2003, a total of 75 lightning caused fires have burned in the subsection. Three of these fires exceeded one acre in size and the largest consumed 4612 acres. During the same time period, 35 human caused fires burned. Five fires exceeded one acre with the largest attaining a size of 200 acres.

**BH FMA** From 1970-2003, a total of 224 lightning caused fires burned in this subsection. Twenty three fires exceeded one acre in size with the largest consuming 2550 acres. During the same time period there were 93 human caused fires. Sixteen of these exceeded one acre with the largest attaining a size of 200 acres.

## TABLE 16 MP-FMA FIRES BY SIZE CLASS AND CAUSE

Size (Class/ Acres)	Lightning Caused	Human Caused
A (<.25 Acres)	19	19
B (.25-9.9 Acres)	35	11
C (10-99.9 Acres)	3	0
E (300-999.9 Acres)	1	0
G (5000 + Acres)	0	1

Table 17 TR-FMA Fires By Size Class and Cause (1970-2003)

Size (Class/ Acres)	Lightning Caused	Human Caused
A (< .25 Acres)	66	36
B (.25-9.9 Acres)	16	7
C (10-99.9 Acres)	1	0

Table 18 CR-FMA Fires By Size Class and Cause (1970-2003)

Size (Class/ Acres)	Lightning Caused	Human Caused
A (<.25 Acres)	54	16
B (.25-9.9 Acres)	15	3
C (10-99.9 Acres)	2	0
D (100-299.9 Acres)	0	1
E (300-999.9 Acres)	2	0

Table 19 LM-FMA Fires By Size Class and Cause (1970-2003)

Size (Class/ Acres)	Lightning Caused	Human Caused
A (< .25 Acres)	28	10
B (.25-9.9 Acres)	12	8
C (10-99.9 Acres)	1	1
E (300-999.9 Acres)	0	1
G (5000 + Acres)	1	0



Table 20 IP-FMA Fires By Size Class and Cause (1970-2003)

Size (Class/ Acres)	Lightning Caused	Human Caused
A (< .25 Acres)	73	151
B (.25-9.9 Acres)	32	39
C ( 10-99.9 Acres)	6	5
D (100-299.9 Acres)	0	2
E (300-999.9Acres)	1	0

Table 21 CM--FMA Fires By Size Class and Cause (1970-2003)

Size (Class/ Acres)	Lightning Caused	Human Caused
A (< .25 Acres)	68	26
B (.25-9.9 Acres)	5	7
C ( 10-99.9 Acres)	1	1
D (100-299.9 Acres)	0	1
F (1000-4999.9 Acres)	1	0

Table 22 BH-FMA Fires By Size Class and Cause (1970-2003)

Size (Class/ Acres)	Lightning Caused	Human Caused
A (<.25 Acres)	151	67
B (.25-9.9 Acres)	65	21
C (10-99.9 Acres)	3	3
D (100-299.9 Acres)	2	2
F (1000-4999.9 Acres)	3	0

Table 23 Total FMA Fires By Size Class and Cause (1970-2003)

Size (Class/ Acres)	Lightning Caused	Human Caused
A (<.25 Acres)	459	325
B (.25-9.9 Acres)	180	96
C (10-99.9 Acres)	17	10
D (100-299.9 Acres)	2	6
E (300-999.9 Acres)	4	1
F (1000-4999.9 Acres)	4	0
G (5000 + Acres)	1	1
Total	667	439

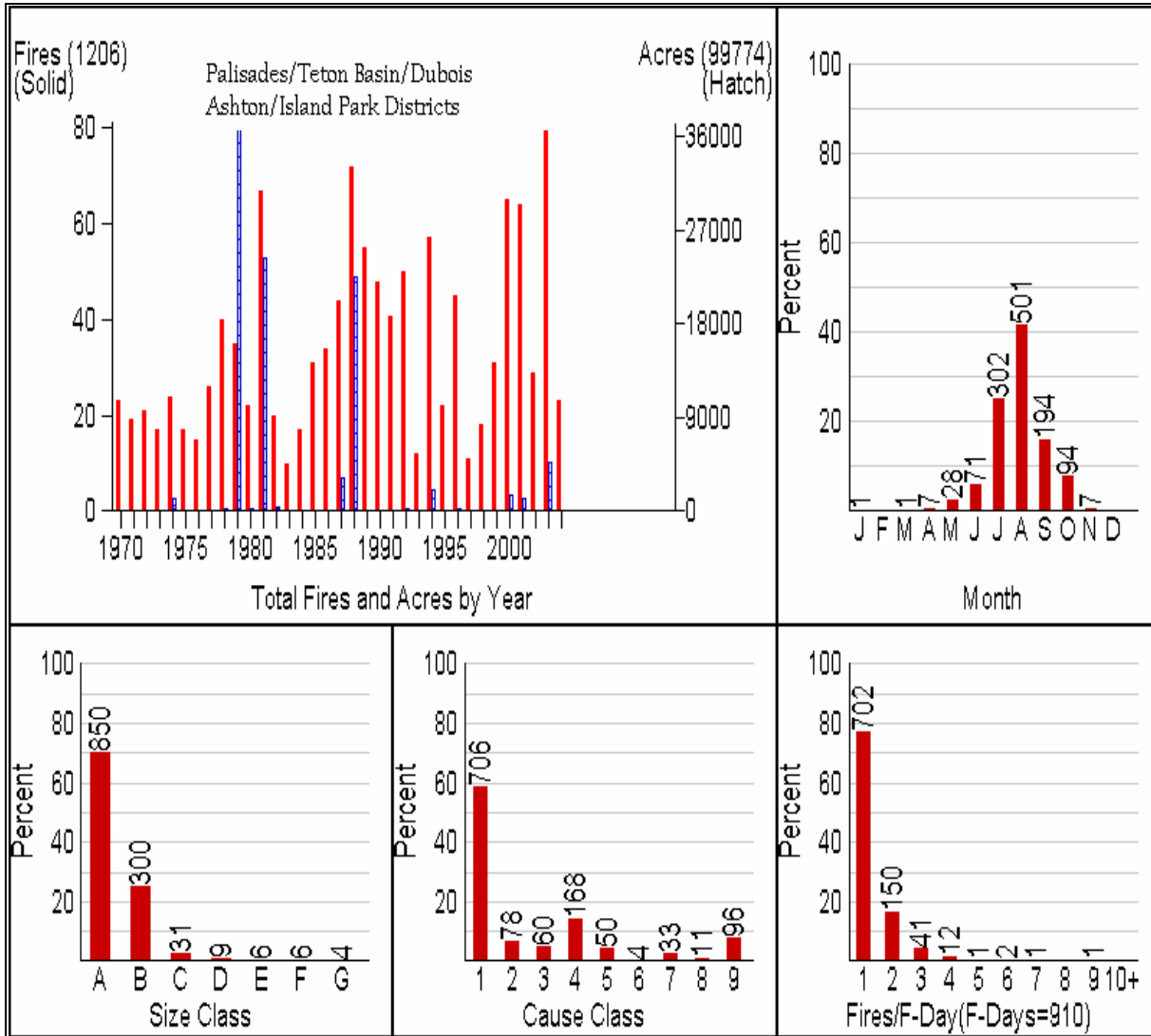
<b>&gt; 1 Acre Biggest</b>	<b>76 73000</b>	<b>55 17721</b>
--------------------------------	---------------------	---------------------

Fire occurrence for the Ashton/Island Park, Dubois, Teton Basin and Palisades Ranger Districts is summarized in Table 24. Graphs were compiled using the Firefamily Plus program and include: Total fires and acres, fire distribution by month, size class distribution, fire cause distribution, and incidence of multiple fire days. Large acreage figures in the table are due to the 1988 North Fork Fire. This analysis includes areas of the districts outside the included FMAs, but is valuable in illustrating general trends.

Past studies of fire history for the Jedediah Smith Wilderness and adjacent areas indicates that prior to the 1900's fires with perimeters in the 2000-8000 acre range were apparent on oblique photos in the lodgepole stands in the northwestern portion of the wilderness. The Teton Forest Reserve was surveyed in 1897. Dr. T. S. Brandegee of the United States Geological Survey, noted that most portions of the Reserve appeared to have been repeatedly burned over. DeLacy (1876) observed wildfires in August 1863 between Swan Valley, Idaho, and Jackson Lake. He described the landscape as being under a pall of smoke from fires burning north of Jackson Lake and noted that in summer, smoke from forest fires was common in the mountains (Gruell 1980). 1872 photos of Teton Canyon show very apparent evidence of a large fire occurrence. Photos taken from the same photopoint in 1969 show conifer sites heavily forested, while some of the openings apparent on the 1872 photos are dominated by trees. Mature aspen stands occupy sites that were formerly quite open. Areas of the burn show a marked increase in the establishment and growth of conifers (Gruell 1980). Since settlement, the potential for fire spread has been reduced by yearly consumption of fine fuels by livestock grazing. The consumption of fine fuels has, in turn, contributed to the success of initial attack by fire suppression crews (Gruell 1980).

Fire occurrence distributions for the Ashton/Island Park, Dubois, Teton Basin, and Palisades Ranger Districts are summarized in Table 24.

**Table 24.** Fire Occurrence Distributions 1970-2004(Fire data compiled for Island Park, Ashton, Dubois, Teton Basin and Palisades Ranger Districts with Firefamily Plus software).



## FIRE REGIMES

*Douglas-fir Fire Regimes* - It appears that Douglas-fir forests in this area historically had a fire interval of 20-50 years. These fires were generally low ground fires, which tended to thin the stands, favoring large older Douglas-fir trees with thick bark. Fire suppression has led to conditions on the Forest where most Douglas-fir stands have multiple stories and dense stocking (trees/acre). Trees of various heights provide a "ladder" for fire, allowing it to reach the tree crowns. Absence of frequent ground fires can cause dead fuels to build up over time. Fires which start under these conditions are much more severe than ground fires and tend to replace the Douglas-fir with earlier seral species such as aspen or lodgepole pine (Bradley et al. 1992)

*Lodgepole pine Fire Regimes*- In this area between the years 1200 and 1700, major fires occurred in the lodgepole pine component approximately every 100 years. Stand -replacement fires in lodgepole pine are closely tied to epidemics of the mountain pine beetle. Tree mortality caused by the beetle creates massive amounts of fuel. Fires that start under such conditions are likely to be severe. This cycle of beetles, fire and stand replacement is part of lodgepole pine's evolutionary history in the Rocky Mountains. We witnessed this cycle on the Forest beginning with the beetle epidemics in the 1960's and ending with large fires such as the North Fork Fire in 1988. Conditions for these large fires still exist in much of the Forest's mature lodgepole pine.

Most lodgepole pine, with the exception of those on cool moist sites, historically experienced low intensity fires every 40-60 years. Fire suppression has interrupted this portion of the lodgepole fire cycle on the Forest. The effects of this are likely not too serious, since conditions created by the mountain pine beetle are similar to those created by light ground-fires (stands are thinned and regeneration may fill in the understory). (FEIS 1997).

*Aspen Fire Regimes*- The average fire-free period historically was 40 years or longer for pure aspen stands. Fire in aspen has been reduced in size and frequency throughout the West due to fire control and the cessation of intentional burning. Fire suppression on the Forest has resulted in many aspen stands that are now mixed, or overtaken by, conifers such as Douglas-fir or lodgepole pine. If left undisturbed for long period of time, conifers can change the soil characteristics so that aspen are less likely to survive (Cryer & Murray 1992). Mixed conifer/aspen stands are conducive to large stand-replacing fires. If such fires were allowed to occur, they would likely lead to pure aspen regeneration providing the fires were not so severe as to destroy the aspen root systems. Moderate severity fires result in better aspen sprouting than either high or low severity fires (Bradley et al. 1992).

*Subalpine Fir Fire Regimes*- Subalpine fir forests generally occupy cool, moist habitats and are therefore common at higher elevations. Because of this, fire is relatively infrequent in this type, occurring every 50-350 years depending on aspect, elevation, and other factors. Large fires generally occur only during drought conditions and periods of high winds. Ladder fuels are common in this type, so fires can spread easily between tree crowns and burn large acreages (Bradley et al. 1992).

*Sagebrush/Grassland Fire Regimes*- Historically, fires likely occurred every 10-25 years in the Forest's sagebrush communities (Clark and Starkey 1990, Houston 1973, Winward 1987). These fires created a mosaic of vegetation conditions across the landscape. In the absence of fire, these communities tend to progress toward stands of Douglas-fir or dense sagebrush. Dense sagebrush stands are less diverse than sagebrush/grasslands, and more susceptible to soil erosion because the herbaceous vegetation is lacking. Much of the sagebrush/grassland on the Forest and throughout the west is in advanced seral stages due to the absence of fire (Winward 1992).

*Whitebark pine Fire Regimes*- Fires are important to the survival and regeneration of whitebark pine. This species can survive surface fires which kill other tree species that compete with it. Since whitebark pine reproduces on fire-prepared sites, stand replacing fires help perpetuate the species. Historically, fire occurred in whitebark pine communities every 30-300 years. Suppression of fires has favored subalpine fir and Engelmann spruce over whitebark pine. Other disturbance agents affecting whitebark pine are white pine blister rust and mountain pine beetle (Morgan et al. 1994).

The Caribou-Targhee National Forest has very little site-specific fire history data. Currently, a fire history study for the Big Bend Ridge area of the Island Park subsection is in progress. Additional fire history studies at the individual subsection level are recommended and this data will be added to the guidebook as it becomes available.

*Protection Considerations*

## PUBLIC SAFETY

The concept of public safety is covered in the forest-wide resource management prescriptions, standards, and guidelines of the Forest Management Plan. The following standards will be utilized to inform Forest users of safety concerns and minimize the chances of endangering the personal safety of users in the Forest as a result of the wildland fire use program.

### Guidelines

- Forest users will be advised of the hazards and risks in the fire area, as well as safe routes in the vicinity of the fire area.
- Trailheads, and trails in the vicinity of the fire area will be signed appropriately, advising Forest users of fire status, hazards and risks, as well as suggested alternative routes of travel. Signing may include trailheads in Yellowstone National Park, Grand Teton National Park and the John D. Rockefeller Parkway as appropriate. Backcountry rangers and work crews will be updated routinely so they can alert and inform visitors they contact.
- If a fire is located along a major access route, Visitor Information personnel will be assigned to contact and advise visitors as they enter the fire vicinity.
- It is suggested that visitors be encouraged to document their travel plans and campsites in the trail registry system. This would facilitate contact if fire conditions change dramatically.
- In the event fire conditions deteriorate significantly, and there is imminent danger to known visitors; the Line Officer may elect to use the forest helicopter to warn users and make evacuations of those users incapable of responding rapidly.
- The Line Officer may request official closure of trails and campsites in the fire vicinity if that person feels that the fire presents significant threats to life and visitor safety.

## PROTECTION CONSIDERATIONS

Administrative sites within the subsections, and private land within and adjacent to the subsections may require special protection considerations.

One intent of applied fuel treatment measures would be the objective of protecting identified private property and federal facilities. This includes areas of the subsections that are susceptible to interface fire.

The long-term objective of any fuel treatment is to eventually increase the opportunity for natural fire to play its role more fully in the forest ecosystem. Fuel treatments should increase the probability of success of the program, restore ecological balance, and substantially reduce the threat of escape from the area or significant damage to capital investments.

Key perimeter areas that are susceptible to a fire crossing from inside the FMAs to outside have been identified. These are areas adjacent to administrative sites, facilities, and/or structures, recreation residences, recreation sites, or management prescription boundaries and automatically convey a higher risk for managing WFU. The land within each FMA has been categorized into three risk zones: **Suppression Zone, Boundary Zone and Interior zone**. Fire managers analyzing values at risk, topography, fuel type, historic fire behavior/occurrence, and weather/climatological patterns determined the location and extent of these zones. Each zone has different prescriptive criteria associated with it and is discussed in more detail in the Stage I write-up.

Preventative measures can be taken in advance to reduce risk of wildland fire. These include modifying the fuels characteristics within these areas to increase the probability of suppression actions being successful; excluding the vulnerable areas by modifying the maximum manageable area perimeter so that it is located in the most defensible location. The most defensible location may not be within the subsections.

All known administrative sites (non-historic and historic), cultural sites and improvements need to be evaluated to determine the appropriate level of fire protection needed. Defensibility of each site must be determined in order to properly identify the measures needed to adequately protect the site. This could be done with surveys using the included evaluation forms addressing pertinent information needed for proper assessment of each site. Seven levels of fire protection are offered for individual sites or groups of sites.

1. No protection
2. Handline construction concurrent with threatening fire
3. Handline and burnout concurrent with fire
4. Fire shelter or water system protection concurring with threatening fire, prepositioning of protection equipment at crucial sites.
5. Fugitive retardant drops concurrent with fire
6. Use of heavy equipment for line construction concurrent with fire
7. Site/Structure/Improvement pretreatment or fuels reduction prior to fire event
  - Fuels reduction adjacent to and around sites with use of prescribed fire or other vegetative manipulation techniques such as pruning, thinning etc.
  - Flammable material movement (firewood, fuel, etc.)
  - Permissible modifications of structures (building materials).

All known sites that are deemed necessary to protect will have one or more protection levels identified and selected for future management. Site evaluation forms are included and upon completion should be appended to the Guidebook or filed at the respective District Offices. It is suggested that completed site evaluations and accompanying digital photographs be saved to CDs where feasible. Site evaluation forms should be augmented with maps, photographs etc.

**Specific protection considerations in the MP-FMA include the following:**

**Big Springs Lookout Tower**

Location T 14N R 44E S27 located on the Island Park Ranger District. The Big Springs lookout tower is a 72 foot enclosed cab steel tower constructed in 1936. The tower is no longer in use and has not been maintained since the 1970's. Appropriate protection strategies should be used in protection of the tower, keeping in mind its low resource value.

**Tillery Lake Dam**

Location: T 48N R 117 W S 13 located on the Ashton Ranger District. Tillery Lake Dam is a treated timber structure with no associated buildings. There is an outfitter camp in close proximity of the dam with some improvements (corrals, hitch rails, and tent platforms). Appropriate protection strategies apply.

**Camp Loll Boy Scout Camp**

Location: T 48N R 117W S23 located on the Ashton Ranger District. Camp Loll is operated under a special use permit by the Boy Scouts of America, Trapper Trails Council. The camp consists of 6 wood buildings, numerous improvements including two boat docks, benches and a number of campsites within the 20 acre permit area. The camp is most heavily used between July 1 and September 1. Approximately 2000 campers visit the camp within this time period. Evacuation of the camp presents many problems due to the number of visitors and the poor access to the camp.

**Idaho Youth Training Center**

Location: T 10N R 45 E S 26 located on the Ashton Ranger District. The camp is operated under a special use permit by the Juvenile Correction Center. The camp consists of a wood A frame cabin, 4 temporary plywood buildings, and 4 boat docks on horseshoe lake. There is a 1000-gallon propane tank on site. The camp is used year around but heaviest usage occurs between June 15 and October 15.

**Squirrel Meadows Guard Station**

Location: T 47N R 117W S 4 located on the Ashton Ranger District. The guard station consists of 1 Forest Service building, 1 Wyoming Game and Fish building, corrals, and a vault toilet. The site is nominated for the National Register of Historic Places.

**Cave Falls Campground**

Location: T 48N R 118W S 16 located on the Ashton Ranger District. The campground lies adjacent to Fall River near the border of Yellowstone National Park. The campground has 22 campsites, three 2-unit vault toilets, one group picnic area and a log fee station structure. The campground is not a heavily used site with most use occurring June through October.

**Indian Lake and Bergman Reservoir Dams**

Location: T 47N R 118W S 5 located on the Ashton Ranger District. Both are operational earthen dams with metal head gates. There are no buildings associated with either site.

**Grassy Lake Dam**

Location: T48N R116W S18 located on the Ashton Ranger District. There are no buildings associated with this site.

**PRIVATE LANDS**



## **SQUIRREL MEADOWS RANCH**

T47N R 118W S 2,3 Small private inholding within the MP FMA. The land exchange was completed for the larger tract. One small tract of private land remains in the original private property tract. A land exchange is being processed and is not finalized and at this time the property remains in private ownership. There are two historic properties and one rustic cabin. Other vacant, falling down structures are present.

**Specific protection considerations in the TR-FMA include the following:**

**Coyote Meadows Trailhead**

Location T46N, R118W., Sec.34 located on the Ashton/Island Park Ranger District. The appropriate protection strategies should be used, keeping in mind its low resource value.

**Seismograph (NE) of Indian Meadows Trailhead**

Location: T46N, R117W., Sec.32 located on the Teton basin Ranger District. The seismograph is administered by Ricks College, Rexburg, Idaho. This unit is located near the Jedediah Smith Wilderness Boundary and is surrounded by rock and scree. Appropriate protection strategies apply.

**INDIAN MEADOWS TRAILHEAD**

Location: T45N., R118W., Sec.1 located on the Teton Basin Ranger District. This trailhead is a parking facility surrounded by clearcuts to the east, west and north with light canopy cover to the south. The facility consists of a trailhead information board and hitching rails for horses. Appropriate protection strategies should be used in the protection of this trailhead facility; keeping in mind this is a low priority.

**NORTH LEIGH CREEK TRAILHEAD**

Location: T45N., R118W., Sec.23 located on the Teton Basin Ranger District. This trailhead is a parking facility surrounded by medium to heavy canopy cover. The facility consists of a trailhead information board, hitching rails and adjacent outfitter camp. Appropriate protection strategies should be used in the protection of this trailhead facility.

**SOUTH LEIGH CREEK TRAILHEAD**

Location: T45N, R118W, Sec.36 located on the Teton Basin Ranger District. This trailhead is a parking facility surrounded by medium to heavy canopy cover to the east and south, with clearcuts and light fuels to the west and north. The facility consists of a trailhead information board, a parking facility and hitching rails for horses. Appropriate protection strategies should be used in the protection of this trailhead facility; keeping in mind this is a low priority.

**Grand Targhee Ski Area Facilities (Buildings and Private 120 acre inholding))**

Location: T45N, R118W, Secs. 6,11 located on the Teton Basin Ranger District. This facility consist in a central location with three hotels, day lodge, administrative building, commercial stores, ticket booths, ski school building, kids club building, maintenance building, tack shed, power sub-station with distribution transformers, 2 ski patrol shelters, communication site, sewage treatment facility and a 20,000 gallon fuel storage facility. This facility is open year round (Summer/Winter). Currently there are four aerial lifts, one surface lift. Grand Targhee operates one lift during the summer months. Grand Targhee will respond to all fires with the help of Teton County, ID and Teton County, WY fire departments to all structure fires and wildland fires. Forest Service will assist in wildland fire protection on Forest Service administrated lands. Fire hydrants are available at the resort. Appropriate protection strategies should be used in the protection of this area with special emphasis on the protection public life, evacuation would consist of 200 to 300 guests and employees. This is a high priority consideration.

**Treasure Mountain Boy Scout Camp**

Location: T 44N, R 118W, Sec.24-25 located on the Teton Basin Ranger District. Treasure Mountain is operated under a special use permit by the Boy Scouts of America, Teton Peaks Council. The camp consists of 12 wood buildings, 28 shelters, 1 bridge, numerous improvements including boat docks, archery range, benches and a number of campsites within the 76-acre permit area. Treasure Mt. Boy Scout Camp has a well, water system, a small lake, underground power and a location for a helispot. The camp is most heavily used between July 1 and September 1. Approximately 2000 campers visit the camp within this time period. Evacuation of the camp presents many problems due to the number of visitors and the limited access to the camp.

#### **Darby Girls camp**

Location: T 43N, R 118W., Sec. 22 located on the Teton Basin Ranger District. The camp is operated under a special use permit by the LDS Church. The camp consists of 14 wooden structures within the 16-acre permit area. There is a 1000-gallon propane tank on site. There is well but water is limited. The camp is used during the summer months but heaviest usage occurs between June 15 and September 1. Approximately 2000 campers visit the camp within this time period. Evacuation of the camp presents many problems due to the number of visitors and the limited access to the camp.

#### **Teton Canyon Campground**

Location: T 44N, R 117W, Sec.4 located on the Teton Basin Ranger District. The campground has 22 campsites, three 2-unit vault toilets, with most use occurring June through October. This campground is adjacent to Teton Creek.

#### **Reunion Flat Campground**

Location: T 44N R 118W, Sec.25 located on the Teton Basin Ranger District. The campground lies adjacent to Teton Creek. The campground has 3 group area campsites, 5 individual campsites three 2-unit vault toilets, information board, pump house with underground electricity and water system, and a log fee station structure. The campground is a heavily used site with most use occurring June through September. There could be as many as 200 to 300 people occupying this site.

#### **Teton Canyon Trailhead**

Location: T 44N, R 117W. Sec.20 located on the Teton Basin Ranger District. The trailhead has 22 one 2 unit vault toilets, one parking area and an information board structure. The trailhead is a heavily used site with most use occurring year round.

#### **Teton Canyon Horse Transfer Station**

Location: T 44N, R 117W., Sec.24 located on the Teton Basin Ranger District. The trailhead/horse transfer station has 2 wooden corrals, 5 hitching rails, two water faucets, one parking area and a information board structure. The trailhead is a heavily used site with most use occurring May through November.

#### **Rapid Creek Administrative Site**

Location: T 43N, R 118W, Sec.4 located on the Teton Basin Ranger District. The trailhead/horse transfer station has a wooden corral, hitching rails, one parking area and an information board structure. The trailhead is a heavily used site with most use occurring May through November. A majority of the use is day use (runners and mountain bikers).

#### **Darby Canyon Trailhead**

Location: T 43N. R 118W. Sec.14 located on the Teton Basin Ranger District. The trailhead consists of one parking area and an information board structure. The trailhead is a heavily used site with most use occurring May through November.

#### **Fox Creek Trailhead**

Location: T 42N, R 118W, Sec.5 located on the Teton Basin Ranger District. The trailhead consists of one parking area and an information board structure, and a wooden bridge. The trailhead is a heavily used site with most use occurring May through November. This site is adjacent to private in holding (Rock Quarry) on Forest service administrated lands.

#### **Moose Creek Trailhead**

Location: T 42N, R 118W, Sec.32 located on the Teton Basin Ranger District. The trailhead consists of one parking area and an information board structure. The trailhead is a heavily used site with most use occurring May through November. This site is located adjacent to an unoccupied outfitter camp located in Moose Creek.

**Coal Creek Trailhead**

Location: T 41N, R 118W, Sec.15 located on the Teton Basin Ranger District. The trailhead consists of one parking area, a vault toilet unisex and a information board structure. The trailhead is a heavily used site with most use occurring May through November.

**Mail Cabin Trailhead**

Location: T 42N, R 118W, Sec.22 located on the Teton Basin Ranger District. The trailhead consists of one parking area and a information board structure. The trailhead is a heavily used site with most use occurring May through November.

**PRIVATE LANDS**

***PRIVATE LANDS BORDER THE ENTIRE WESTERN EDGE OF THE TETON SUBSECTION DEVELOPMENT OF THE WFIP SHALL CONSIDER THE RISKS TO PROXIMATE PRIVATE HOLDINGS.***

**FOX CREEK QUARRY**

Location: T43N R118 W S32. The quarry is located within the TR-FMA

**Grand Targhee Resort:**

Location: T45N, R118W, Secs. 6,11 located on the Teton Basin Ranger District

**Specific protection considerations in the CR-FMA include the following:**

## **ALPINE WILDLIFE VIEWING AREA**

Location: T36N R119W S3 & 4 – Palisades Ranger District. This site is located adjacent to State Highway 89 approximately three miles south of the city of Alpine, Lincoln County, Wyoming. The site consists of the following: an asphalt parking lot which accommodates 18 single vehicles and three large trailers/RVs; two highway approaches; metal interpretive signs; a log building, approx. 20' x 10' with a concrete sidewalk from the parking lot to the building; a picnic table and benches. The site is fenced.

### **Bear Creek Campground**

Location: T2S R45E S6 – Palisades Ranger District. Located along the Bear Creek drainage, the eight camping sites with picnic tables and fire rings have been almost completely overgrown by the vegetation along the roadside. A soon-to-be-replaced/destroyed two-unit toilet facility in poor condition is just up the road from the campground.

## **BEAR CREEK TRAILHEAD**

Location: T2S R45E S6 – Palisades Ranger District. This facility is at the end of Forest Road #058, and consists of a parking area suitable for approx. 12 vehicles with trailers; a three-sided information board approx. 30 feet up the Bear Creek Trail; hitching rails for horses. The site is fairly open, surrounded by brush and some cottonwoods.

## **BROCKMAN GUARD STATION**

Location: T2S R43E S19 – Palisades Ranger District; accessed by F.S. Road #246, a gravel road extending north from F.S. Road #086 (Brockman Creek Rd.). The Brockman Guard Station is a one-room cabin with porch and outhouse located on 42.5 acres surrounded by a barbed wire fence. A 500 gallon propane tank is present on the site. A post and pole corral and fence was added to the property in the late 70's – early 80's. The fence surrounds the cabin and measures approx. 55 ft. by 80 ft. The corral size is 25 ft. by 45 ft.

## **CALAMITY BOAT RAMP**

Location: T1S R45E S17 – Palisades Ranger District. The Calamity Boat Ramp is a concrete ramp of 1,135 feet in length. There is a large brick construction, 4 unit toilet facility immediately south of the boat ramp; a large parking lot with two dumpsters and an RV dump station; and a smaller day use parking area, with access to a series of picnic sites above the high water line of the reservoir. There are two docks on site, a large plastic dock directly on the ramp, and a smaller wooden set of docks used for day use tie-up of boats and jet-skis.

## **CALAMITY CAMPGROUND**

Location: T1S R45E S17 – Palisades Ranger District. The campground is situated on the westernmost point of Palisades Reservoir, in a primarily lodgepole pine stand. Many of the trees were removed in the early 90's due to a bug infestation, so the campground now has reduced shade. 41 campsites are in this campground, along with 5 2-unit vault toilets (brick construction), a small storage building near the host site, and a three-sided information board/registration site. The campground is heavily used from Memorial Day through Labor Day, and has one entrance.

## **CALAMITY GUARD STATION**

Location: T1S R45E S17 – Palisades Ranger District; located approx. 1/8 mile from Palisades Dam, off U.S. Highway 26. There are two log buildings at this site: the main building (dimensions - 44 ft. x 30 ft.) and the garage/shop (dimensions – 24 ft. x 40 ft.).

## **CALAMITY SUMMER HOMES AREA**

Location: T1S R45E S18 – Palisades Ranger District. This property is located on the northwest side of the Palisades Reservoir, approx. 1 road mile west of U.S. Highway 26, and 1/2 mile west of the Palisades Dam. Topography is rough to steep, with the access road into the subdivision entering from F.S. Road # 058. The road follows the contour lines through the subdivision, and is comprised of an all-weather surface. Ground cover is lodgepole pine and aspen with native grasses and brush. The subdivision is mostly on the south slope of what is called the Calamity Point area, with typical lot sizes of approx. .8 acres. All lots in the subdivision are on wooded, mountain slopes with significant tree cover and some heavy brush. 90 lots (25 with buildings on site).

## **CAMP LITTLE LEMHI BOY SCOUT CAMP**

Location: T1S R44E S1 – Palisades Ranger District. 64 acres, located approx. ¼ mile from the South Fork of the Snake River, 4 miles northwest of Palisades Dam on F.S. Road #076. Used only in the summer months; usually June through August. Vegetation is primarily Douglas fir, lodgepole pine, spruce & aspen trees, with serviceberry, hawthorn, chokecherry and mountain maple shrubs. 7 buildings (director's cabin, Ella Hall, gas house, health lodge, main lodge, shower house, maintenance shed, Tendoy's cabin), amphitheater, archery and rifle ranges, docks, outhouses, tent platforms, water storage tank.

## **CAMP TA-MAN-A-WIS GIRL SCOUT CAMP**

Location: T1S R44E S5 – Palisades Ranger District. 38 acres, located on Long Gulch Road (F.S. #059), approx. 9 miles from U.S. Highway 26, southeast on F.S. Road #076, and approx. 7 miles northwest of Palisades Reservoir. The site is situated in the upper portion of a canyon, in a gently sloping area. This camp is used in the summer months, usually June through August. Vegetation is primarily lodgepole pine & aspen trees, with an intermingling of native grasses. Most of the property is covered with trees. 3 buildings (infirmary, main lodge, shower house), camp sign and gate at entrance, archery range, approx. 30 wooden tent platforms, 3 covered shelters, amphitheater, upper & lower corrals, 6 outhouses.

## **CURRENT CREEK GUARD STATION**

Location: T1S R44E S2 – Palisades Ranger District. Located on Bear Creek Trail (F.S. #047), approx. 2 miles west of the Bear Creek Trailhead. One building, 10 ft. x 12 ft. with a 4 ft. porch. Peeled lodgepole construction, concrete foundation and floor, two windows, shingle roof.

## **FALLS CAMPGROUND**

Location: T1N R43E S11 – Palisades Ranger District. The campground is located on the west bank of the South Fork of the Snake River, approx. 2.5 miles southeast of U.S. Highway 26 on F.S. Road #076. Located in a late seral cottonwood stand, with a heavy dogwood, willow and buffalo berry understory, the campground has 24 campsites, four 2-unit CTX vault toilets and an information board/registration station. The campground is heavily used from Memorial Day through Labor Day, and has limited access, that being the one entrance off FS Road #076.

## **FALLS GROUP AREA**

Location: T1N R43E S11 – Palisades Ranger District. The Falls Group Area, located approx. ¼ mile east of the Falls campground, also has one access, and is situated in similar vegetation to

the Falls campground. It has a capacity of 160, with two CTX vault toilets, an information board and 12 large picnic tables clustered near a large fire ring. The group area is heavily used from Memorial Day through Labor Day, with moderate use for about a month prior to and after the heavy season.

## HOFFMAN SUMMER HOMES AREA

Location: T3S R46E S8 – Palisades Ranger District. This property is located on the southwestern shore of Palisades Reservoir, approx. 11 road miles from Alpine, Wyoming, on F.S. Road #087 (McCoy Creek). One way in/out access road is graveled, with moderate grade; mountainous terrain, although subdivision terrain is on a more gentle slope, approx. 20%. Ground cover is lodgepole pine and aspen, with willow and native brush. Typical lot size is approx. .92 acres. 38 lots (32 with buildings on site).

### McCoy Creek Campground and Boat Ramp

Location: T3S R46E S5/6 – Palisades Ranger District. The campground is situated on the southwestern side of Palisades Reservoir, three miles west of the Idaho-Wyoming border, in a primarily Douglas fir and Subalpine fir stand. The site contains both a campground and a concrete boat ramp, which is in poor condition. The campground has an upper and lower loop, less than a quarter mile apart. 29 campsites are in this campground, along with 4 newly installed 2-unit CTX vault toilets, one in the upper loop, and three in the lower. The campground is moderately used from Memorial Day through Labor Day, and has one entrance into each loop. There is a single unit information board at each site, and a collection box/registration area.

## PALISADES SUMMER HOMES AREA

Location: T1S R45E S17 & 20 – Palisades Ranger District. This property is located on the northwest side of the Palisades Reservoir, approx. 1½ road miles west of U.S. Highway 26, one mile west of the Palisades Dam. Topography is rough to very steep, with the one way in/out access road into the subdivision entering from F.S. Road # 058. Ground cover is Douglas fir and aspen with native grasses and brush. The subdivision is long and narrow, with typical lot sizes of approx. .8 acres. All lots in the subdivision are on a steep, wooded, mountain slope with good tree cover and some heavy brush. 20 lots (18 with buildings on site).

## RED PEAK RADIO TOWER

Location: T1S R44E S16 – Palisades Ranger District. Located near Red Ridge Trail (F.S. #035), elevation 8,720 ft. One building, housing radio repeater equipment; two triangular radio towers.

## SNAKE RIVER BOAT CLUB

Location: T1S R45E S29 – Palisades Ranger District. Located approx. 4 miles south from Palisades Dam on F.S. Road #058 (Bear Creek – Elk Jensen Road). Site is 3.14 acres, including the access road. Access road is gated; inside the gate, the road is moderately steep and passes through aspen and mountain brush. The area near the reservoir is relatively flat, sloping 10 to 15% to the waterline. Slopes on either side are steep; one slope covered with conifers, the other is mountain brush and grasses. Caretaker's cabin, lodge, restroom, propane tank, gasoline tank, boat ramp & dock with 150 ft. of approach walkway and 6 25' x 5' slips.

## SPRING CREEK BOAT RAMP

Location: T1N R43E S4 – Palisades Ranger District. The Spring Creek Boat Ramp is located forty miles east of Idaho Falls, 1/8 mile off US Highway 26 on Forest Road #076, just upriver of the Highway 26 bridge going to Swan Valley. Surrounded by cottonwoods, the site is comprised of a 2,500 sq. yd. paved parking area, a two-unit CTX vault toilet, a fee site with information board, a concrete ramp and a three-sided information board just east of the ramp. A solar light is situated on the opposite side of the ramp.

### McCoy Creek Private Land

Location: T1S R45E S2,11-Private inholding. This parcel is located on the McCoy Creek Road and has a private dwelling and quanset hut associated with the property.

**Quarter Circle O Private Land**

Location T1S R42E S2, 10,11. This private parcel is in the process of land exchange and is anticipated to be complete in 2004. There are currently three structures on the property (house, corrals, tack shed).

***PRIVATE LANDS  
IN ADDITION TO THE  
SPECIFIC PRIVATE PARCELS  
DESCRIBED ABOVE, PRIVATE AND  
STATE LANDS BORDER MUCH OF  
THE WESTERN, NORTHERN AND  
FAR SOUTHEASTERN EDGES OF  
THE SUBSECTION. IN ADDITION  
TO THESE ADJACENT LANDS  
THERE ARE SEVERAL  
ADDITIONAL INHOLDINGS  
PRESENT WITHIN THE  
BOUNDARIES OF THE  
SUBSECTION. THE DEVELOPMENT  
OF THE WFIP SHALL CONSIDER  
THE RISKS TO PROXIMATE  
PRIVATE HOLDINGS.***



**Specific protection considerations in the LM-FMA include the following:**

**Eightmile Trailhead**

Location: T9N R29E S34 the trailhead consist of a Romtec plastic vault toilet, trailhead kiosk, and hitch rails.

**Charcoal Kilns**

Location: T11N R27E S1: The site consist of 4 Kilns a CXT vault toilet, 2 concrete picnic tables, well with Hand pump, wooden handicap access boardwalk, information kiosk, various educational/information signs, entrance sign, and fence around the site.

**Spring Mountain Canyon (pvt. Camp structure)**

Location: T12N R27E S28: The area has 2-3 old mining cabins that have been restored and donated to a church group.

**Private Land in Viola Gulch**

Location: T13N R30E S11: The area consists of a mining claim with 5 old mining buildings.

**Scott Canyon Trailhead-fence**

Location: T11N R30E S 34: Trailhead sign, bench, and a buck and pole fence. across the canyon.

**Copper Mine-Pvt Structure**

Location: T10N R30E S22: Some structures are present but to what extent is unknown.

**Mahogany Repeater**

Location: T10N R31E S14: Forest Service radio repeater site with a building and equipment.

**Crooked Creek Trailhead**

Location: T11N R31E S12: The area consists of a bench, pole fence, and a gate.

**Webber Creek Campground**

Location: T12N R32E S15: This area has a CXT vault toilet, information kiosk, trail signs, 2 wooden picnic tables, and one fire grate.

**Fritz Cabin**

Location: T13N R32E S15: This old cabin in good condition with a fire pit, a Romtec plastic vault toilet, and an information kiosk.

**Webber Creek Cabin**

Location: T12N R31E S15: This is a historic mining cabin.

**Pass Creek Dam**

Location: T9N R29E S29: This is an earthen dam on pass creek. There are no structures associated with this site.

**Specific protection considerations in the IP-FMA include the following:**

**Big Springs Summer Home Area**

Location: T 14N R 44E S 33 located on the Island Park Ranger District. The area has 18 Special Use Summer home permit, the homes are made of wood with metal roofing.

**Big Springs Boat Ramp**

Location: T 14N, R 44 E, S 33 located on the Island Park Ranger District. The ramp area has one bathroom (Wood and plaster), wooden boat ramp, 50 yards wooden walkway, and a railroad trestle nearby.

**Big Springs Campground**

Location: T 14 N, R 44 E, S 34 located on the Island Park Ranger District. 15 Campsites and 3 picnic sites each with a wooden table and fire ring, 4 information boards, and 2 bathrooms (cedar).

**Big Spring Interpretation Trail**

Location: T 14 N, R 44 E, S 33 & 34 located on the Island Park Ranger District. 1/4 mile asphalt path and ¼-mile wooden path, bathroom

**Henderson Subdivision Summer Homes**

Location: T 13 N, R 44 E, S 10 located on the Island Park Ranger District, this area has 32 private residences one mile east of the Moose Creek Summer Homes.

**Pole Bridge Campground**

Location: T 11 N, R 44 E, S 20 located on the Ashton Ranger District. The campground has six wooden tables, a wooden bathroom, and a one lane wooden bridge.

**Warm River Fish Hatchery:**

Location: T 10N R44E S10 located on the Ashton Ranger District, the former hatchery consists of three wood-sided buildings with composite and metal roofing. The buildings are on the National Historic Register access by way of a single lane two track and across a 1½ lane wooded bridge.

**Moose Creek Summer Homes**

Location: T 13 N, R 44 E, S 5 located on the Island Park Ranger District. The area has 12 Special Use Summer home permits; the homes were built of wood with metal roofing.

**Johnnie Sack Cabin**

Location: T 14N, R44E S 33 located on the Island Park Ranger District, this small wooded cabin on the east side of Big Springs next to Big Springs interpretation trail.

**Yellowstone Basin Survey**

Location: T 12 N, R 44 E, S 4-10, 17, 18, 20 located on the Island Park Ranger District this subdivision has multiple private homes, a sawmill, and a boy scout camp.

**Specific protection considerations in the Centennial-FMA include the following:**

**Aldous/Hancock Lakes Trailhead**

Location: T 14 N, R 39 E, S 27 located on the Dubois Ranger District, this trail head has 3 concrete picnic tables, 2 wooden picnic tables, 3 bear proof food boxes, 1 camp pad, 1 fire pit and a vault toilet. The area is a popular disperse campsite.

**Bear Gulch Trailhead**

Location: T 13 N, R 38 E, S 4 located on the Dubois Ranger District, this trailhead as a wooded trail sign and a horse hitch and rail.

**Continental Divide Trailhead**

Location: T 14 N, R 37 E, S 14 located on the Dubois Ranger District.

Location: T 14 N, R 35 E, S 33 located on the Dubois Ranger District. Wooded trail signs and information kiosk.

**Big Flat Electronics Site**

Location: T 14 N, R 36 E, S 26 located on the Dubois Ranger District the radio tower is metal with a metal and cement maintenance building.

**Steel Creek Campground**

Location: T 13 N, R 38 E, S 7 and 8 located on the Dubois Ranger District is a developed campground with several wooden picnic tables 6 vault toilets and a buck and pole fence also within the area is a Special Use permit for an isolated cabin made of wood with a metal roof.

**Paul Reservoir**

Location: T 13 N, R 35 E, S 10 and 15 located on the Dubois Ranger District this an earthen dam and no buildings are associated with this site.

**Trail Creek trail head**

Location: T 14N R 38E S 24, located on the Dubois Ranger District, this trailhead has a trail sign and an information kiosk.

**West Camas Creek trail head**

Location: T 14N, R 38E, S 24 located on the Dubois Ranger District has a trailhead sign and an information kiosk.

**Coalmine Trail Head**

Location: T 14 N, R 38 E, S 24 located on the Dubois Ranger District has a trailhead sign.

**Coalmine Cabin**

Location: T 14 N, R 38 E, S 14 located on the Dubois Ranger District. This old log cabin was associated with the Coalmine.

**West Camas Cabin**

Location: T 14 N, R 37 E S 29 located on the Dubois Ranger District is an old log structure that predates the founding of the Targhee National Forest. Pending evaluation by the forest archeologist the site maybe eligible on the National Register of Historic Places

**Signal Peak Repeater**

Location: T 13 N, R 37 E, S 21 located on the Dubois Ranger District, this is an all-metal communications tower.

**Howard Springs.**

Location: T 16N, R 44E , S 32 on the Island Park Ranger District the Springs is located along US highway 20 one mile south of Targhee Pass and has a concrete bathroom, 4 picnic tables, information board, spring-box, water distribution system, and a wooden foot bridge.

**Peterson Cabin:**

Location: T 13N, R 41E, S 6 on the Island Park Ranger District this a Special Use Permit as a isolated cabin used has a summer lease home consisting of four wood buildings with metal roofing.

**Targhee Creek trail head.**

Location: T 16N, R 44E, S 33 on the Island Park Ranger District The trail head consist of 2 hitch rails, loading ramp, information kiosk, and 3 bear boxes.

**PRIVATE LANDS  
DEVELOPMENT OF THE WFIP SHALL  
CONSIDER THE RISKS TO PRIVATE  
LAND WITHIN THE BORDERS OF  
THE ISLAND PARK AND  
CENTENNIAL SUBSECTIONS.**

## Specific protection considerations in the BH FMA include the following:

### **Aberdeen Mennonite Church Organization Camp**

Location: T 1S R 45E S2 – Palisades Ranger District. Located approx. 3 miles north of Palisades dam, 2 road miles north off U.S. Highway 26 on F.S. Road 260. Topography is rough, with one way in/out access road into camp entering from F.S. Road 260. Ground cover is primarily Douglas Fir and native grasses. Facilities include a main lodge, ten A-frame cabins, and a bathhouse.

### **Alpine Campground**

Location: T 37N R 119W S18 – Palisades Ranger District. Located 3 miles northwest of Alpine, Wyoming, approx. ¼ mile west off U.S. Highway 89. The ground cover in the campground is primarily lodgepole pine, brush, and grasses. Topography surrounding the campground is rough with similar vegetation. Alpine campground has 32 individual camp units and a small group area with picnic tables, fire rings and grills, two CTX vault toilets (double unit – concrete construction) and three older concrete block toilets (single unit), a three-panel information board and fee station across the road from the host site. The site is gated in the fall, and remains closed until early May.

### **Alpine 4-H Organization Camp**

Location: T 37N R 119W S18 – Palisades Ranger District. Located 2 ½ miles north of Alpine, Wyoming, approx. ¼ mile east off U.S. Highway 89. The camp is situated at the mouth of Long Canyon in fairly open and flat terrain. Ground cover throughout the camp has mountain brush, grasses, and low to moderate conifer cover. The surrounding topography is rough to very steep with primarily mixed conifer, brush, and grasses. This facility consists of two parking areas, dining hall, cook's house, crafts hall, twenty one camping cabins, two restroom buildings, bathhouse, classroom building, dormitory building, food storage building, two corrals, riding arena, basketball and volleyball courts, horseshoe pit, softball diamond, archery range, shooting range, and an amphitheatre.

### **Alpine Summer Home Area**

Location: T 37N R 119W S7 – Palisades Ranger District. Located 3 miles northwest of Alpine, Wyoming, approx. ¼ mile east off U.S. Highway 89. Topography is rough and steep, with one way in/out access road into subdivision entering from highway (F.S. Road 021). Ground cover consists of mixed conifer, mixed mountain brush, and grasses. There are 37 lots on site, but only 4 lots have buildings on them.

### **Big Elk Creek Campground**

Location: T 1S R 46E S18 – Palisades Ranger District. Located 2 road miles east off U.S. Highway 26 adjacent to Big Elk Creek and Palisades Reservoir. Terrain is fairly flat and open with mixed brush, grass, and aspen throughout the campground. Slopes north and south of the campground are steep with ground cover consisting of mixed conifer, brush, and grasses. The campground contains 18 individual camp units and three group sites with picnic tables, fire rings and grills, five CTX vault toilets (double unit – concrete construction), three-panel information board and fee station, and a pump house located across the road from the host site.

### **Big Elk Creek Trailhead**

Location: T 1S R 46E S18 – Palisades Ranger District. Located 2 ½ road miles east off U.S. Highway 26, adjacent to Big Elk Creek and YMCA camp. The trailhead is open and flat with brush and native grasses. Slopes north and south of trail are very steep with ground cover primarily consisting of mixed conifers. The site consists of a large parking area, a CTX vault toilet (single unit – concrete construction), three-panel information board situated above the parking area, hitching rails, and mangers for horses.

### **Black Canyon Trailhead**

Location: T 3N R 42E S13. Very little development at this trailhead – no formal parking area, some dispersed campsites scattered throughout the immediate area, and a single panel information board that needs replacement.

### **Blowout Boat Ramp**

Location: T 1S R 46E S31 – Palisades Ranger District. Located on Palisades Reservoir approx. ¼ mile west off U.S. Highway 26, adjacent to campground. The area surrounding the ramp is open and moderately flat with brush and grass. The topography around the ramp is rough to steep with lodgepole pine, mixed mountain brush, aspen, and grasses. This site is comprised of a double-unit concrete block toilet, a hand pump for water distribution, a two lane staging area used by boaters preparatory to launching and after take out, and a 600 foot concrete ramp with an adjustable plastic/metal dock.

### **Blowout Campground**

Location: T 1S R 46E S31 – Palisades Ranger District. Located on Palisades Reservoir approx. ¼ mile west off U.S. Highway 26, adjacent to boat ramp. The ground cover in the campground is lodgepole pine, mountain brush, grasses, and forbs. The topography around the campground is rough to steep with lodgepole pine, mixed mountain brush, aspen, and grasses. The campground is comprised of 23 individual units with picnic tables, fire rings and grills, a CTX vault toilet (double unit – concrete construction), three-panel information board, fee station located adjacent to the host unit, and a pump house with well enclosed by a chainlink fence.

### **Burns Creek Trailhead**

Location: T 3N R 42E S12. – Palisades Ranger. Very little development at this trailhead – no formal parking area, some dispersed campsites scattered throughout the immediate area, and a single panel information board that needs replacement.

### **Chicken Spring Cabin/Toilet Facilities**

Location: T 1N R 45E S3 – Palisades Ranger District. Located on F.S. Trail #084 (Palisades National Recreation Trail) which access the Upper and Lower Palisades Lakes. The area surrounding these facilities is very steep with ground cover consisting of mixed conifer, mountain brush, and grasses. Toilet facilities are constructed with wood and two are located at the Upper Lake (West and East sides), two located at the cabin site, and one located at the south end of the lower lake. The cabin is located at the mouth of Chicken Spring Canyon located in between the upper and lower lakes. This building has had numerous improvements in recent years improving overall structure, appearance, and replacing the inside stove. Cabin structure consists of logs and a new metal roof. These facilities receive high use with most use occurring during June through October. Appropriate protection strategies should be used in this area due to the recreational use, access, location, and replacement costs associated with the facilities.

### **Fullmer Boat Ramp** (formerly known as Cottonwood Boat Landing)

Location: T 3N R 42E S10 – Palisades Ranger District. Vegetation consists of Cottonwood, Juniper, Silverberry, Dogwood and other shrubs. Located along the South Fork of the Snake River, this site is scheduled for major reconstruction in the near future, but at the present time all that exists is a gravel road into the site with a steel rail cattle guard at the entrance, a fee collection station and single-panel information board, a 50-foot concrete boat ramp, and some undefined parking areas. Two single-unit portable toilets are brought in annually in the late spring and removed mid-fall. Adjacent to the site there is a number of dispersed campsites, none of which have been developed, nor will they be as part of the reconstruction project.

### **Indian Creek Boat Ramp**

Location: T 2S R 46E S18. Undeveloped area, consisting of a number of dispersed camping areas. Two very old single unit wood construction outhouses are located at this site. No developed boat ramp at this location.

#### **Indian Creek N/S Trailheads**

Location: T 2S R 46E S9 – Palisades Ranger District. Located 7 ½ miles north of Alpine, Wyoming, approx. 2 road miles east off U.S. Highway 26 on F.S. Road 281. The area around the trailhead is flat and open with mountain brush and grasses. The topography adjacent to the trailhead is very steep with Douglas Fir, mountain brush, and grasses. Each of these trailheads has a parking area and single-panel information boards. The South Indian Creek Trailhead also has a number of hitching rails and horse mangers, and will be undergoing some site improvement in 2005.

#### **Kelly Mountain Repeater Site**

Location: T 3N R 41E S2 – Palisades Ranger District. Located adjacent to Kelly Canyon Ski Area and F.S. Road 218. The site is situated on an open ridge top (elev. 6805) with fuels consisting of grass, brush, and sparse conifer growth throughout fairly steep topography. This facility contains one site with 4 buildings made with wood and metal construction. There is 1 metal tower and 3 wooden towers associated with the buildings. This site has critical repeaters for the BLM, Idaho State Police, Department of Highways, Department of Reclamation, and many private cooperators. The site will be receiving improvements to buildings and wooden towers starting in the summer of 2005.

#### **Kelly Canyon Ski Area**

Location: T 4N R 41E S34 – Palisades Ranger District. Located off F.S. Road 218. Topography surrounding the ski area is rough to steep with ground cover consisting of mixed conifer, mountain brush, and grasses. The structures at this facility are mostly located on private land; there are six small buildings located on Forest Service administered land (lift shacks and utility-type buildings).

#### **Little Elk Creek Trailhead**

Location: T 1S R 45E S11, 14 – Palisades Ranger District. Not much development at this trailhead; dispersed campsites situated all along the road into the trailhead. Corral located on the far side of the trailhead is in very poor condition.

#### **Mike Spencer Trailhead**

Location: T 2N R 44E S4 – Palisades Ranger District. Located approx. 6 miles northeast of Swan Valley, Idaho, 2 road miles east off U.S. Highway 31 on FS. Road 250. The trailhead lies at the mouth of Burnt Canyon with primarily mixed conifer dominated by fairly rough to steep topography. This site is made up of a parking area, single-panel information board, hitching rail, water pump and single-unit restroom.

#### **Moody RAWS Station**

Location: T 4N R 42E S29 – Palisades Ranger District. Located approx. 4 miles west of Kelly Canyon Ski Area, off F.S. Road 218 on F.S. Road 342. The surrounding area is rough to steep with ground cover consisting of mixed conifer, mountain brush, and grasses. This site has a remote automatic weather station with a jack-rail fence surrounding the site. Weather station is owned and maintained by the Forest Service.

#### **Moody Trailhead**

Location: T 4N R 43E S18 – Palisades Ranger District. The surrounding area is rough to steep with ground cover consisting of mixed conifer, mountain brush, and grasses. This site contains a parking area, three-panel information board, and a CTX vault toilet (single unit – concrete construction).

#### **North Rainey Creek Trailhead**

Location: T 2N R 45E S5 – Palisades Ranger District. Located approx. 10 miles northeast of Swan Valley, 5 ½ road miles south of Pine Creek Pass and U.S. Highway 31. Topography is rough with conifers, mountain brush, and grass dominating much of the landscape. Recently reconstructed, this site contains a parking area, three-panel information board, hitching rails and

mangers, a CTX vault toilet (single unit – concrete construction), and a horse loading ramp for handicap riders.

#### **Palisades Creek Campground**

Location: T 1N R 44E S24 – Palisades Ranger District. Located approx. 3 miles southeast of Swan Valley, 2 ½ road miles northeast off U.S. Highway 26. Campground lies adjacent to Palisades Creek with conifer cover throughout the campground and mixed conifer dominating the slopes south of the creek. Mountain brush, mahogany, grasses, and conifers are present on the slopes north of the creek. This site is made up of 8 units with picnic tables, fire rings and grills, a CTX vault toilet (double unit – concrete construction) with a three-sided information board and fee station located adjacent to it, and a small pumphouse situated near the well site.

#### **Palisades Creek Trailhead/National Recreation Trail**

Location: T 1N R 44E S24 – Palisades Ranger District. Located approx. 3 miles southeast of Swan Valley, 2 ½ road miles northeast off U.S. Highway 26. Trailhead lies adjacent to Palisades Creek and campground with mixed conifer dominating the slopes south of the creek and mountain brush, mahogany, grasses, and conifer on the slopes north of the creek. Adjacent to the Palisades Creek Campground, this trailhead has a parking area, a water faucet, horse hitching rails, mangers, and a three-panel information board. The trail and trailhead receives heavy use with most use occurring June through October.

#### **Pine Basin Organization Camp**

Location: T 2N R 44E S7 – Palisades Ranger District. Located approx. 5 miles north of Swan Valley, Idaho, ¼ mile east off of U.S. Highway 31 in the Pine Creek drainage. This site is fairly flat and open with grass, willows, and conifer cover along the creek bottom. Pine Creek canyon runs southwest to northeast with topography rough to steep with mixed conifer, mountain mahogany, brush and grasses. This facility consists of a parking area, main lodge (with adjoining propane tank), caretaker's cabin, amphitheater and a pole fence to keep livestock out of the area.

#### **Rainey Creek Trailhead**

Location: T 2N R 44E S26 – Palisades Ranger District. Located approx. 2 ½ miles east of Swan Valley, 5 road miles northeast off U.S. Highway 26 on F.S. Road 257. Trailhead lies adjacent to Rainey Creek with primarily mountain sage, mahogany, juniper, grasses, and conifer cover on slopes north of the creek, slopes south of the creek are dominated by mixed conifer. Recently reconstructed, this site contains a large parking area, three-panel information board, hitching rails and mangers, a CTX vault toilet (single unit – concrete construction), and a horse loading ramp for handicap riders.

#### **Sheep Creek Summer Home Area**

Location: T 1S R 45E S1,2,9 – Palisades Ranger District. Located approx. 2 miles north of Palisades dam, 1 road mile north off U.S. Highway 26 on F.S. Road 260. Topography is rough to very steep, with steep one way in/out access road into the subdivision that enters from F.S. Road 260. Ground cover is primarily Douglas Fir and native grasses dominating the summer home area with adjacent slopes composed of sage and grasses. There are 44 lots on site, but only 13 of the lots have buildings on them.

#### **Table Rock Campground**

Location: T 4N R 41E S35. – Palisades Ranger District. The campground is situated in Table Rock Canyon and the mouth of Hawley Gulch approx. 9 road miles from U.S. Highway 26, 1 road mile southeast of Kelly Canyon Ski Area on F.S. Road 217. The site is primarily mixed conifer with mountain brush and grasses. Campground consists of 8 single units with fire rings and grills, 75-person group site, two CTX vault toilets (double units – concrete construction), and approx. 20 new concrete picnic tables. The approx. 3 ½ acre site is surrounded by a buck and rail fence constructed in 2003, with a steel rail cattle guard at the entrance. Hawley Gulch Creek runs down to the east of the fenced area. The water system consists of a fenced spring development



located approx. 250 feet north of the campground fence, with gravity flow to the three water hydrants. A three-sided information board and fee station is located just outside the single lane entrance to the campground.

#### **West Pine Creek Trailhead**

Location: T 3N R 44E S29 – Palisades Ranger District. Located approx. 8 miles north of Swan Valley, Idaho, ½ mile north off U.S. Highway 31 on F.S. Road 230. The site is situated in the West Pine Creek drainage with mountain brush, grass, and willows dominating the creek bottom and canyon slopes covered with mixed conifer, aspen, mountain brush, and grasses. Trailhead lies southwest of the West Pine Creek LDS Organization Camp with a parking area.

#### **West Pine Organization Camp**

Location: T 3N R 44E S29 – Palisades Ranger District. Located approx. 8 miles north of Swan Valley, Idaho, ½ mile north off U.S. Highway 31 on F.S. Road 230. The site is situated in the West Pine Cr. Drainage with mountain brush and grass dominating the creek bottom and canyon slopes covered with mixed conifer, aspen, mountain brush, and grasses. Facilities at this location include: the main lodge with adjoining garage, baseball diamond, horseshoe pits, volleyball field, an amphitheater, and nine designated camping units.

#### **YMCA Organization Camp**

Location: T 1S R 46E S18 – Palisades Ranger District. Located 2 ½ road miles east off U.S. Highway 26, adjacent to Big Elk Creek and trailhead. The camp is open and fairly flat with brush and native grasses. Slopes around the camp are very steep with primarily conifers dominating the slopes. Access to this camp is by a wood bridge over Big Elk Creek. Facilities at this location include: the main dining lodge, crafts building, infirmary, staff cabin, director's cabin, six sleeping cabins, bathhouse/toilet building, generator building, and a playground area that includes a softball diamond and volleyball field.

#### **Teton Pass Parking Area/Trailhead**

Location: T 41N R 118W S24 – Jackson Ranger District and Teton Basin Ranger District. Located on U.S. Highway 22. The topography surrounding the site is very steep with open grass meadows and mixed conifer. This parking area on the summit of Teton Pass receives heavy use year round with the primary use by hikers and bicyclists (with some horse use) heading south along the ridge trail (F.S. Trail 3004). Hiking use also occurs to the north following a route on the Mount Glory ridge. This site contains two information boards with wood construction, a replication of a historical entrance sign and metal signs along the parking area. A restroom may be installed in the future. Wooden sign posts have been installed at many trail junctions.

#### **Phillips Bench Trailhead**

Location: T 41N R 117W S17, 19 – Jackson Ranger District. Located on U.S. Highway 22 approx. 2 miles west of Teton Pass. This road is essentially a one way in/out road that accesses Phillips Ridge, a high use recreation area. The road was built to install and maintain the BPA powerline connecting a substation in Swan Valley with a substation in Jackson. Firewood cutters and paragliders use the road network. Two primary trails connect with the powerline road (Ski Lake and Phillips Canyon). These trails are very popular with hikers and bikers. These trails also access the Jedediah Smith Wilderness. Trail users generally park along Hwy 22. Wooden sign posts have been installed at many trail junctions.

#### **Mosquito Pass/Trail**

Location: T 41N R 118W S32 – Jackson Ranger District. Located at the end of the Mosquito Creek Road. This trailhead is a high use recreation area for both motorized and non-motorized uses. F.S. Trail 3005 accesses the trail system leading south down the ridge of the Snake River

Range. Three wooden information kiosks are located along this road. A fall hunting outfitter has an assigned site along this road.

**30975 Road – Cottonwood Road**

Location: T 40N R 117W S19, 30 – Jackson Ranger District. This road branches off the Mosquito Creek Road, which includes dead end spur roads 976 and 977. The 30975 road accesses the ridge between Jackson and Palisades Ranger Districts and is popular with motorcyclists and mountain bicyclists.

**Sheep Gulch Boat Ramp**

Location: T 37N R 118W S23 – Jackson Ranger District. Located on the north side of the Snake River approx. 3 miles east of Alpine, Wyoming on U.S. Highway 89. This site receives heavy use during the summer months. Facilities include two restrooms, a changing station, wooden benches, two wooden information kiosks, numerous wooden signs, and a high standard trail.

**Teton Pass Seismograph Monitoring Station (USGS)**

Location: T 41N R 118W S25 – Teton Basin Ranger District. Located south of the communication site on F.S. access road 019. This site is situated on an open ridge top (elev. 8637) with sparse grass and shrub growth, with intermittent Sub-Alpine Fir. The topography surrounding the site is very steep with open grass meadows and mixed conifer. The seismograph is administered by USGS.

**Teton Pass Communication Site**

Location: T 41N R 118W S25 – Teton Basin Ranger District. Located ½ mile south off U.S. Highway 22 on F.S. access road 019. This site is situated on an open ridge top (elev. 8637) with sparse grass and shrub growth and intermittent Sub-Alpine Fir growth. The topography surrounding the site is very steep with open grass meadows and mixed conifer. The communication site contains four commercial repeater facilities constructed from metal and concrete, two propane tanks, and six towers (5 metal, 1 wooden). This site is served by overhead power lines extending from Jackson, Wyoming and deemed as a high priority for protection from fire.

**Mail Cabin Trailhead**

Location: T 41N R 118W S22 – Teton Basin Ranger District. Located 10 miles southeast of Victor, Idaho off U.S. Highway 22. The surrounding topography is steep with primarily mixed conifer. The trailhead consists of one parking area and an information board structure. The trailhead is heavily used site with most use occurring May through November.

**Trail Creek Campground**

Location: T 41N R 118W S5 – Teton Basin Ranger District. Located 6 miles southeast of Victor, Idaho off U.S. Highway 22. Fuels surrounding the campground is primarily mixed conifer and the topography is rough to steep. The campground has 11 sites, 1 SST vault toilet, 1 concrete storage shed, 1 information board, and 1 campground sign. The campground is a heavily used site with most use occurring late June through September.

**Mike Harris Campground**

Location: T 3N R 46E S28 – Teton Basin Ranger District. Located 4 miles southeast of Victor, Idaho off U.S. Highway 22. Fuels surrounding the campground is primarily lodgepole pine and the topography is fairly rough. The campground has 11 sites, 1 host site, 1 double SST vault toilet, 1 information board structure, and 1 campground sign. The campground is heavily used with most use occurring late June through September.

**Pole Canyon Trailhead**

Location: T 3N R 45E S26 – Teton Basin Ranger District. Located 2 miles south of Victor, Idaho off U.S. Highway 31. Trailhead is surrounded by mixed conifer and steep topography. This site

contains a parking area, buck/rail fencing barrier, and a hitching rail. The trailhead is a heavily used site with use occurring year round.

#### **Pine Creek Campground**

Location: T 3N R 44E S24 – Teton Basin Ranger District. Located 6 miles west-southwest of Victor, Idaho off U.S. Highway 31. The campground is surrounded by primarily lodgepole pine in fairly rough terrain. The campground has 11 sites, 1 SST vault toilet, 1 information board structure, and 1 campground sign. This site is moderately to heavily used with most use occurring late June through September.

#### **Sheep Corral Trailhead**

Location: T 3N R 44E S22 – Teton Basin Ranger. Located 9 miles west of Victor, Idaho off U.S. Highway 31. The surrounding topography is rough with lodgepole pine, mountain brush, and grasses. This site has a parking area and it is heavily used for recreation and livestock purposes with most use occurring June through November.

#### **South Horseshoe Trailhead**

Location: T 5N R 44E S32 – Teton Basin Ranger District. Located 10 miles west of Driggs, Idaho on F.S. Road 235. This site is fairly open with mountain brush and grasses to the east and primarily mixed conifer to the west. Topography surrounding the site is rough to steep. Trailhead consists of steel hitching rail, loading ramp (rail road ties), 1 treated lumber bridge, and small information board. This site is heavily used year round.

#### **Relay Ridge Radio Repeater Site**

Location: T 5N R 43E S35 – Teton Basin Ranger District. Located 13 miles west of Driggs, Idaho on F.S. Road 219. The site is situated on an open ridge top (elev. 8829) with sparse ground fuels and conifer growth. This site contains 9 individual sites with 6 total buildings of wood, metal, and concrete construction. One to two towers are associated with each building-site. Most towers are metal with exception of a few wooden towers that have not yet been replaced. This is a critical repeater site for the Forest Service, BLM, and State of Idaho (Bureau of Communications) along with many other cooperators and deemed as a high priority for protection against fire. The repeater site has overhead power lines (wood poles) serving the site with low power 150 watts.

#### **Marquita Maytag (Buildings and Private inholding)**

Location: T 5N R 43E S25 – Teton Basin Ranger District. Located 12 miles west of Driggs, Idaho off F.S. Road 235. Topography throughout the property is fairly rough with primarily mixed conifer, mountain brush, and grasses. This property contains 1 house (wood construction) with metal roof, corrals, and jack rail fence on the north, south, and eastern portion of the property. Access is a one way in/out road with a turnaround located at the end of the driveway and a locked gate at the entrance. Overhead power lines and phone lines supported by wood poles serves the residence. This property has a large water tank with fire hose attached to it for protection. However, the size of the tank is unknown.

#### **Jerry and Ann Williams (Buildings and Private inholding)**

Location: T 4N, 5N R 43E, 44E S1,6,31,36 – Teton Basin Ranger District. Located 12 miles west of Driggs, Idaho off F.S. Road 235. Topography throughout the property is fairly rough to steep with primarily mixed conifer, mountain brush, and grasses. Access is a steep one way in/out access with turnarounds. This property includes: 1 house with rock siding and metal roof, 2 additional cabins with lofts, constructed with wood siding and metal roofs, 1 wood barn (metal roof) with corrals attached to the barn. Overhead power lines and phone lines supported by wood poles serves the residence.

#### **Packsaddle Lake**

Location: T 5N R 43E S12 – Teton Basin Ranger District. Located 13 miles west-northwest of Driggs, Idaho off F.S. Trail 212. This site is surrounded by primarily mixed conifer and rough

topography. The site has dispersed campsites, and buck/rail fence around spring box. The site is a heavily used recreation site with most use occurring June through October.

#### **Private Lands**

In addition to the specific private parcels described above, private and state lands border much of the subsection. In addition to these adjacent lands there are several inholdings present within the boundaries of the subsection. The development of the WFIP shall consider the risks to proximate private holdings.

#### **Utility Corridors**

Three utility corridors lie with-in this subsection. One corridor extends from Palisades Dam east along U.S. Highway 26/89 into Alpine, Wyoming. This is an overhead electrical transmission line supported with wooden poles. The second corridor extends through the Pine Creek drainage, south of Victor, Idaho, and follows U.S. Highway 22 up to Teton Pass, Wyoming down to the community of Jackson Hole. This is a high powered transmission line with metal towers. There are several gated service roads accessing the towers with F.S. locks attached to gates. The power line is administered and maintained by Bonneville Power Association. Associated with this electrical transmission line is a substation located west of Pole Canyon near Victor, Idaho. Substation lies directly under the power lines at T 3N R 45E S23. However, construction and other descriptive details are unknown at this time. The third electrical transmission line extends from a substation outside Driggs, Idaho to Marquita Maytag's inholding, and then to the Relay Ridge Repeater Site. This is an over head power line supported with wood poles. Appropriate protection strategies, tactics, and safety considerations should be employed to protect these electrical transmission lines.

#### **Outfitter Campsites**

The Districts will maintain close contact with special use permit outfitter camps located in the fire vicinity. Outfitters will be briefed on fire status, expected fire behavior, and any management actions taken on the fire.

The possibility exists that some temporary outfitter camp locations may be damaged by fire. If this occurs, the Forest Service will assist and give first consideration to affected permittees. The Forest Service will immediately investigate any known tangible damage to private property.

#### **Timber Management Areas Scheduled for current use**

The following is a list of timber management projects scheduled for current use within timber management areas (management prescription 5.1, 5.1.3, 5.1.4) that are located within identified fire use areas. To date only the CM FMA contains projects meeting the above criteria.

These projects represent significant capital investment and appropriate protection strategies apply.

#### **CR-FMA**

##### **Winslow Salvage: Location T 14 N, R 38 E, S 13, 24, 25.**

The sale area is located approximately 8 miles north of Kilgore, Idaho. This timber sale is a fire salvage within the Winslow Fire off of the Cottonwood Loop (FS Road 026) on the Coalmine Road (FS Road 023) and the Trail Creek Road (FS Road 029). There are 8 harvest units within the project area. It is anticipated that the sale will be sold during the summer of 2005 and operations will commence that summer and be completed by the winter of 2006.

##### **Centennial Salvage: Location T 14 N, R 41 E, S 32, 33, 34.**

The sale area is located approximately 15 miles west of the Island Park Ranger Station in Island Park Idaho. This timber sale is a salvage sale off of the Yale Kilgore on the Keg Springs Road (FS Road 042). There are 50 harvest units within the project area. It is anticipated that the sale will be sold during the summer of 2007 and operations will commence that winter and be completed by the winter of 2009.

### Guidelines

- If identified timber projects are located within or adjacent to the allowable burn area, contact the District Timber Management Administrator to help determine protection strategy.

### Heritage Resources

These guidelines apply only to wildland fire use treatments. Prescribed fires and post-fire rehabilitation treatments involving ground disturbing activities will require separate consultation and may, depending on previous survey coverage, require archaeological inventory.

Heritage resources, like other resources, must be managed in such a way that the resource is not degraded. Where possible and considering firefighter safety, cultural resources should be avoided and/or protected from wildfire and tactical holding actions. If suppression efforts may create significant ground disturbance in the vicinity of known or suspected heritage resources, the Forest Archaeologist should be notified.

**MP-FMA** The review of the Forest Service records for the MP-FMA indicates there are 25 inventoried cultural resource sites that may be affected by wildland fire use. The majority of these sites have not been evaluated for significance. Two of these sites, the Johnny Sack cabin (TG-00058) and the Warm River fish hatchery (TG-00754), are listed in the National Register of Historic Places. One site, Squirrel Meadows Guard Station (TG-00533) is nominated for the National Register, and three additional sites are listed as National Register eligible. It should be stressed that these are known sites, and although this subsection has been extensively inventoried, additional sites and sensitive areas may be present.

**TR-FMA** The TR-FMA has high frequencies of American Indian sites in the upper reaches of the drainages. Over 79 heritage resource sites have been identified. The vast majority are associated with high altitude adaptations by American Indians. This area may also contain spiritual sites important to local tribes. Historic Euro-American sites are generally related to early 1900s ranching.

**CR-FMA** The CR-FMA is one of the least inventoried areas of the Forest; however, 50 heritage resources have been identified. All but two sites are American Indian hunting camps, lithic workshops, and volcanic glass quarry sites. This area also contains the Currant Creek and Brockman Guard Stations, Forest Service administrative sites eligible for the National Register of Historic Sites. Potential exists for interpretation of the guard stations as early 20<sup>th</sup> century Forest Service Sites. There are currently no sites in the C-R FMA that are listed on or nominated for the National Register of Historic Sites.

**LM-FMA** The LM-FMA includes 171 eligible sites for the National Register. In particular, this area contains over 200 heritage resources of predominately American Indian sites including habitation sites and rock art. The aboriginal settlement pattern for the area is related to scarce perennial water sources in generally high altitude settings. European-American settlement in this area was focused on homesteading and lead mining in the late 19<sup>th</sup> century. The Birch Creek Charcoal Kilns are the most significant site relating to this period of settlement and is a major tourist attraction. The Charcoal Kilns are the only site listed in the National Register of

Historic Places. The remains of ancillary sites associated with the lead mining industry are found in several canyons. The Worthing Cabins also have interpretive potential for the late 19<sup>th</sup> century homesteading.

**IP-FMA** The review of the Forest Service records for the IP-FMA indicates there are 85 inventoried cultural resource sites that may be affected by wildland fire use. The majority of these sites are eligible for nomination to the National Register of Historic Places (NRHP), hence, they are treated the same as cultural sites that are actually listed on the NRHP. Two of these sites, i.e., the Bishop Mountain Lookout and Big Falls Inn, are listed on the NRHP. It should be stressed that these are known sites, and although this subsection has been sample surveyed, additional sites and sensitive areas may be present. The IP-FMA has a relatively high frequency of American Indian sites in the upper reaches of the drainages. Over 85 heritage resource sites have been identified. The vast majority of the documented heritage resource sites are high altitude seasonal campsites or temporary work stations associated with resource procurement activities. This area may also contain spiritual sites important to local tribes. Historic Euro-American sites are generally related to early to mid-1900s ranching and recreational activities.

**CM-FMA** The review of the Forest Service records for the CM-FMA indicates there are 514 inventoried cultural resource sites that may be affected by wildland fire use. The majority of these sites are eligible for nomination to the National Register of Historic Places (NRHP), hence, they are treated the same as cultural sites that are actually listed on the NRHP. As of yet no sites have been listed on the NRHP. Archaeologically this subsection is extremely unique, in that, it includes some areas with the highest density of cultural sites on the Forest and in Southeast Idaho. In these areas there are some extremely important sites that the archaeological community and the Idaho SHPO consider as nationally significant. It should be stressed that these are known sites, and although this subsection has been sample surveyed, additional sites and sensitive areas may be present. The C-FMA has a very high density of American Indian sites in the upper reaches of the drainages. The vast majority of the 514 identified and recorded heritage resource sites are high altitude seasonal campsites or temporary work stations associated with resource procurement activities. This area may also contain spiritual sites important to local tribes. Historic Euro-American sites are generally related to early 1900s ranching.

**BH-FMA** The BH-FMA contains over 100 heritage resource sites with most sites located along the northwestern edge of the Big Hole Mountains. Current documentation indicates there are 112 sites eligible to be nominated for the National Register. The majority of these sites are American Indian hunting camps and lithic workshops. Historic Euro-American sites are associated with early 20<sup>th</sup> century mining and ranching. The Palisades Mountains area is one of the least inventoried areas of the Forest. Site types and frequencies are relatively unknown. There is potential to enhance and interpret early 20<sup>th</sup> century lime kiln and mining sites. Interpretation of a National Register-eligible American Indian site at Table Rock Campground also has potential.

#### Guidelines

- Consult Fire Management Plan, archaeological database and Forest Archaeological Site Atlas located at the appropriate District Office. In the event of a Fire Use event, the FUMA will consult the Fire Use Guidebook, archaeological database, and Forest Archaeological Site Atlas for a listing of heritage resource sites that could occur within or adjacent to the allowable burn area. Site lists will be updated as necessary. Current efforts are underway to update site atlases located at each District office. Upon completion of this endeavor, the district atlases will be available for use in preparation of the Wildland Fire Implementation Plan.
- Contacting Archaeologist: If known heritage resource sites are located within or adjacent to the allowable burn area, contact the Forest Archaeologist to help determine protection strategy.
- Burn Plan: Wildland Fire Implementation Plans will identify heritage resource sites within and adjacent to the allowable burn areas. Potential tactics that could be used to protect sites include:

burnout and backing fires to produce safe black line around a site, use of trails and natural features to herd or shift the fire away from sites, water and/or bucket drops, scratch lines, and possible wet line and foam applications.

- Wildland fire personnel: Assure that burn personnel are briefed on the strategy and specific techniques to be used to protect heritage resources.
- Escaped Fire: Should the fire leave prescription and warrant suppression, an appropriate management response will be initiated. Contact the Forest Archaeologist to help develop a response strategy when heritage resources are threatened.
- Site Evaluation Forms: It is recommended that the included evaluation forms be completed for historic structures and reviewed by the Forest Archaeologist with the intent that completed forms are readily available for inclusion in the WFIP.
- Follow-up Studies: The Targhee National Forest is currently lacking information regarding the effects of fire and firefighting procedures on heritage resources within its jurisdiction. The activities proposed in the guidebook offer an opportunity to study such effects for better management of the resource in the future. It is therefore recommended that follow up studies involving current archaeological survey and testing techniques, along with quantitative analysis of the results, be included in post-fire treatments.

**Site Evaluation Worksheet**

Site: \_\_\_\_\_ Legal: \_\_\_\_\_

**Factors Influencing Rate of Spread;**

Slope \_\_\_\_\_ Position on slope \_\_\_\_\_ Aspect \_\_\_\_\_ Fuel Model \_\_\_\_\_  
 Fuel Continuity \_\_\_\_\_ Ladder Fuel \_\_\_\_\_

Remarks \_\_\_\_\_

**Resources**

Water supply (type and capacity) \_\_\_\_\_  
 Equipment on site \_\_\_\_\_  
 Available Barriers \_\_\_\_\_

**Access/Egress:**

Road (width, grade, condition, bridges, etc.) \_\_\_\_\_  
 Trails \_\_\_\_\_  
 Airstrip \_\_\_\_\_  
 Helispot \_\_\_\_\_  
 Boat \_\_\_\_\_

Occupancy (number, type, duration, etc.) \_\_\_\_\_

**Identified Protection Level:**

- > \_\_\_\_\_ No protection
- > \_\_\_\_\_ Handline construction concurrent with threatening fire
- > \_\_\_\_\_ Handline and burnout concurrent with threatening fire
- > \_\_\_\_\_ Fire Shelter or water system protection concurrent with threatening fire
- > \_\_\_\_\_ Use of heavy equipment for fireline construction concurrent with threatening fire
- > \_\_\_\_\_ Pretreatment: fuels reduction of unnatural fuels prior to fire event
  - fuels reduction
  - flammable material movement (firewood, fuel etc.)
  - change in building materials

**Proposed Tactics:**

\_\_\_\_\_

**Probability of success**

		Flame Length					
		0-2'	2-4'	4-6'	6-8'	8'	8+
Fair	40%+	___	___	___	___	___	___
Good	60%+	___	___	___	___	___	___
Excellent	80%=	___	___	___	___	___	___

Prepared By \_\_\_\_\_ Date \_\_\_\_\_

**Draw Site Map on back: attach relevant notes and photographs**



**Structure Evaluation Worksheet**

**Structure:** \_\_\_\_\_ **(1 of ) Site:** \_\_\_\_\_

- Roof: Construction, type/conditon \_\_\_\_\_
- Siding: material/conditon \_\_\_\_\_
- Heat traps: gables/decks/porches/vents \_\_\_\_\_
- Windows: exposed/covered/type \_\_\_\_\_
- Overhead Lines: power/phone/shutoffs \_\_\_\_\_
- Underground Lines: power/phone/shutoffs \_\_\_\_\_
- Fuel Storage: type/quantity/lines/shutoffs \_\_\_\_\_
- Outside combustibles: wood piles/fences/yard accumulation \_\_\_\_\_
- \_\_\_\_\_
- Septic Tank/location: \_\_\_\_\_
- Position on slope: \_\_\_\_\_
- Working space – minimum clearance guide:

<b>Slope Percentage</b>	<b>Uphill</b>	<b>Actual</b>	<b>Sides</b>	<b>Actual</b>	<b>Downhill</b>	<b>Actual</b>
Level to 20%	100ft	_____	100ft	_____	100ft	_____
21% to 40%	150ft	_____	150ft	_____	150ft	_____
41% to 60%	200ft	_____	200ft	_____	200ft	_____

Additional Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Prepared by: \_\_\_\_\_ Date: \_\_\_\_\_

(Attach maps, drawings, notes, digital photographs, or other appropriate information)

## STAGE I, II, AND III ANALYSIS

**Detailed descriptions of Stage I-III and periodic assessment processes are located in appendix E (Prescribed Fire Management Policy Implementation Procedures Reference Guide).**

Federal Wildland Fire Management Policy requires a Wildland Fire Implementation Plan (WFIP) be initiated for all wildland fires. However, only the most complex fires being managed for resource benefits will require completion of all parts of a WFIP. The full WFIP consists of three distinct stages (Stage I - III). Progressive development of these stages will occur for wildland fires managed for resource benefits or where initial attack is not the selected response. Most wildland fires will require completion of Stage I and Stage II information during their management. As resource benefits become more important, strategic decision factors, additional planning and documentation requirements (additional WFIP stages) are involved. As each stage is prepared, it will be attached to previous stages until completed or management of the fire accomplishes the objectives. When the complete WFIP has been developed, it will be a highly specific operational management plan. Preparation of the WFIP may be accomplished through the forms provided in this plan or using the WFSa software program. It is recommended that units consider using the WFSa computer program as much of the required data can be assembled and pre loaded prior to managing a WFU. The program is free and can be downloaded from:

<http://www.fs.fed.us/land/fire/wfsa.htm>

### DECISION AUTHORITY

Decision authority to approve wildland fire use (WFU) lies with the Forest Supervisor for all complexity levels at Regional and National Preparedness Levels I, II, III, but may be delegated to a District Ranger if the District Ranger has the requisite fire management knowledge, experience, and staff available (FSM 5140.42). At National Preparedness Levels IV and V, the Regional Forester must approve all wildland fire use *and* prescribed fire implementation (FSM 5140.32). Upon the approval of Stage I of a wildland fire implementation plan; the Forest Supervisor will notify the Regional Director of Fire and Aviation Management of the decision to initiate management of a wildland fire use event (FSM 5140.32). In order to ensure WFU management oversight, districts will forward copies of the approved WFIP to the Fire Staff at the Supervisor's Office, who in turn forwards copies of the plans to the Regional Fire Use Specialist. When a fire is expected to burn on two or more agency jurisdictions, all affected Agency Administrators will approve the WFIP (GYACG 1998).

#### Wildland Fire Management Plan - Stage I:

<b>Objective:</b>	<b>assess the fire situation and Agency Administrator decision, describes management actions, and sets the initial periodic assessment schedule as the primary stage of the planning process.</b>
<b>Information Source:</b>	Size-up information, current fire weather and fuel moisture conditions, local conditions, Agency Administrator input, and site-specific information from the Fire Management Plan (FMP).
<b>Completion Time:</b>	The Strategic Fire Size-Up is completed as soon as aerial or on-the-ground resources provide a confirmation of the fire's existence and the required fire size-up information.  All remaining Stage I components completed within 8 hours of completion of Strategic Fire Size-Up.

## FIRE MANAGEMENT PRESCRIPTIONS

Natural ignitions will be allowed to burn under varying weather and fire behavior conditions. The ecological significance of large fires in the plan area is recognized, and naturally caused fires will be allowed, provided they meet the prescription criteria.

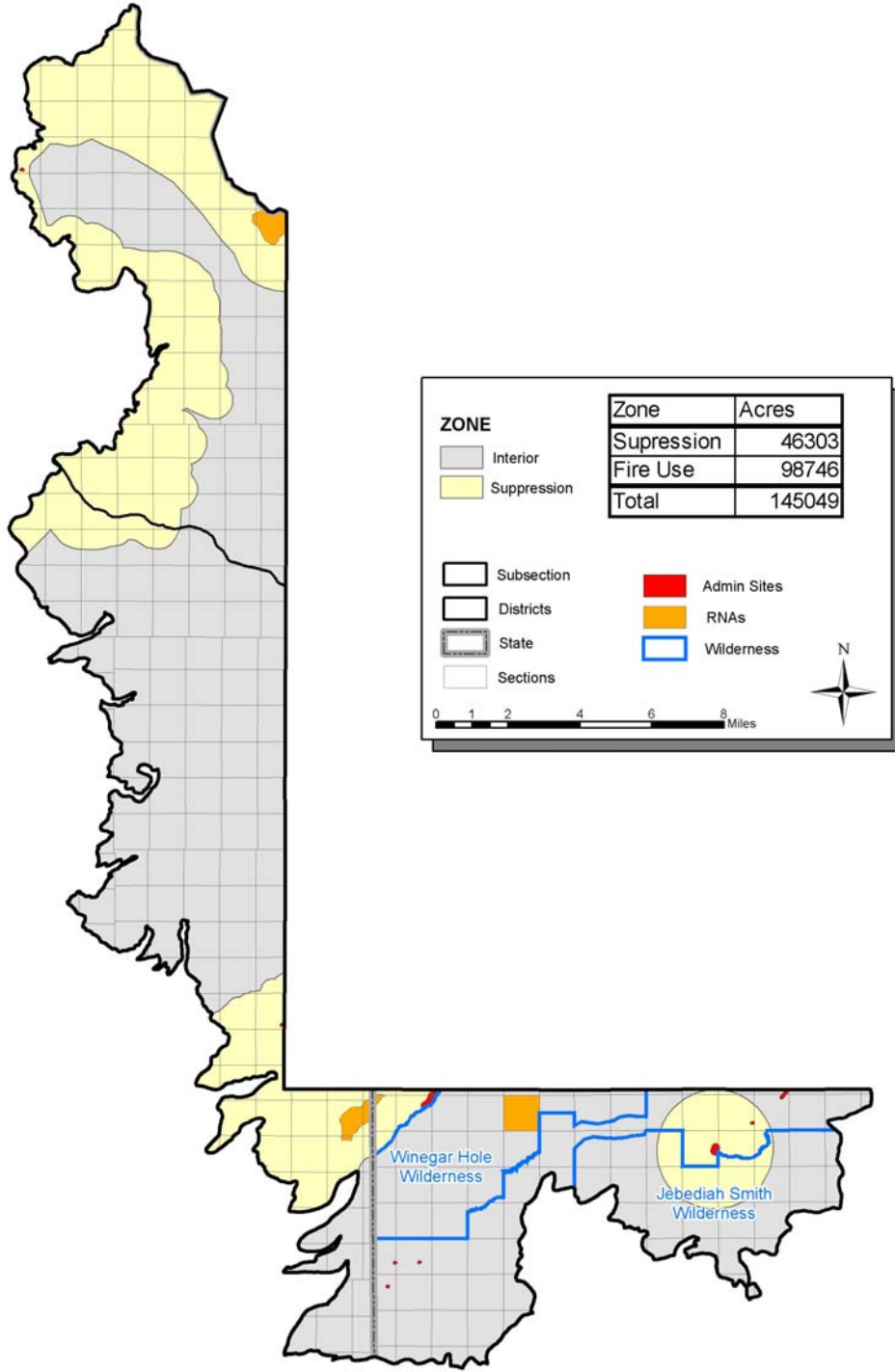
- A site specific Wildland Fire Implementation Plan will be prepared for each fire managed as WFU.
- National, Intermountain Region and Greater Yellowstone Preparedness levels allow declaration of a WFU.
- The WFIP will be reviewed and revalidated each day by the appropriate line officer.
- Protection of life is assured. There will be adequate time to warn Forest visitors of potential threats from the fire, and there is no predicted threat to visitors and residents outside of the plan area.
- Protection of property is assured.
- Acceptable air quality predicted. Smoke modeling predictions combined with current smoke dispersal forecasts indicate that WFU will not cause significant impacts to neighboring communities and residents. In addition, many smoke complaints by neighboring communities will be considered a "smoke impact".
- Adequate resources are available to carry out the WFIP. Adequate resources include, but are not limited to a Fire Use Manager, Fire Monitors, Public Information Specialists, etc. to implement the plan properly.
- Fire behavior forecasts indicate that WFU will meet prescription elements of the WFIP.
- A risk assessment of impacts to Threatened and Endangered Species and their habitat shows no predicted long-term significant impacts to the recovery of any listed species.
- Social, political and economic assessments indicate no significant impact to neighboring communities and residents.
- Energy Release Component (ERC) is used as one of the initial evaluation criteria. ERC is calculated daily as part of the National Fire Danger Rating System (NFDRS), and is related to the available energy (BTU) per unit area (square foot) within the flaming front at the head of the fire. ERC is considered a "composite" fuel moisture index based on both living and dead fuel moisture. Actual ERC is compared to the historic fire weather charts for the representative weather station. Current ERC is compared to the historic 90<sup>th</sup>, 97<sup>th</sup>, and normal percentile values; and compared to the selected years. A best estimate of the high ERC for the remaining fire season will be predicted based on long-term forecasts and climatological data. Fire behavior predictions will be adjusted to reflect the current and predicted ERC.
- Current drought index and large fuel moisture are assessed. Actual 1000 hour and Keetch-Byrum Drought Index are compared with historic records. Fire behavior predictions are adjusted to reflect current drought conditions. ERC, 1000 hour and Keetch-Byrum Drought Index historic weather charts are located in this chapter and will be updated as necessary.
- The land within each FMA has been categorized into three risk zones: *Suppression Zone*, *Boundary Zone* and *Interior Zone*. Fire managers analyzing values at risk, topography, fuel type, historic fire behavior/occurrence, and weather/climatological patterns determined the location and extent of these zones. Prescriptive criteria for each zone follows:
  - **Suppression Zone** All ignitions human or natural originating within the suppression zone will be suppressed utilizing the appropriate management response. Fires entering

the suppression zone from either the boundary or interior zones will be managed with the appropriate management response.

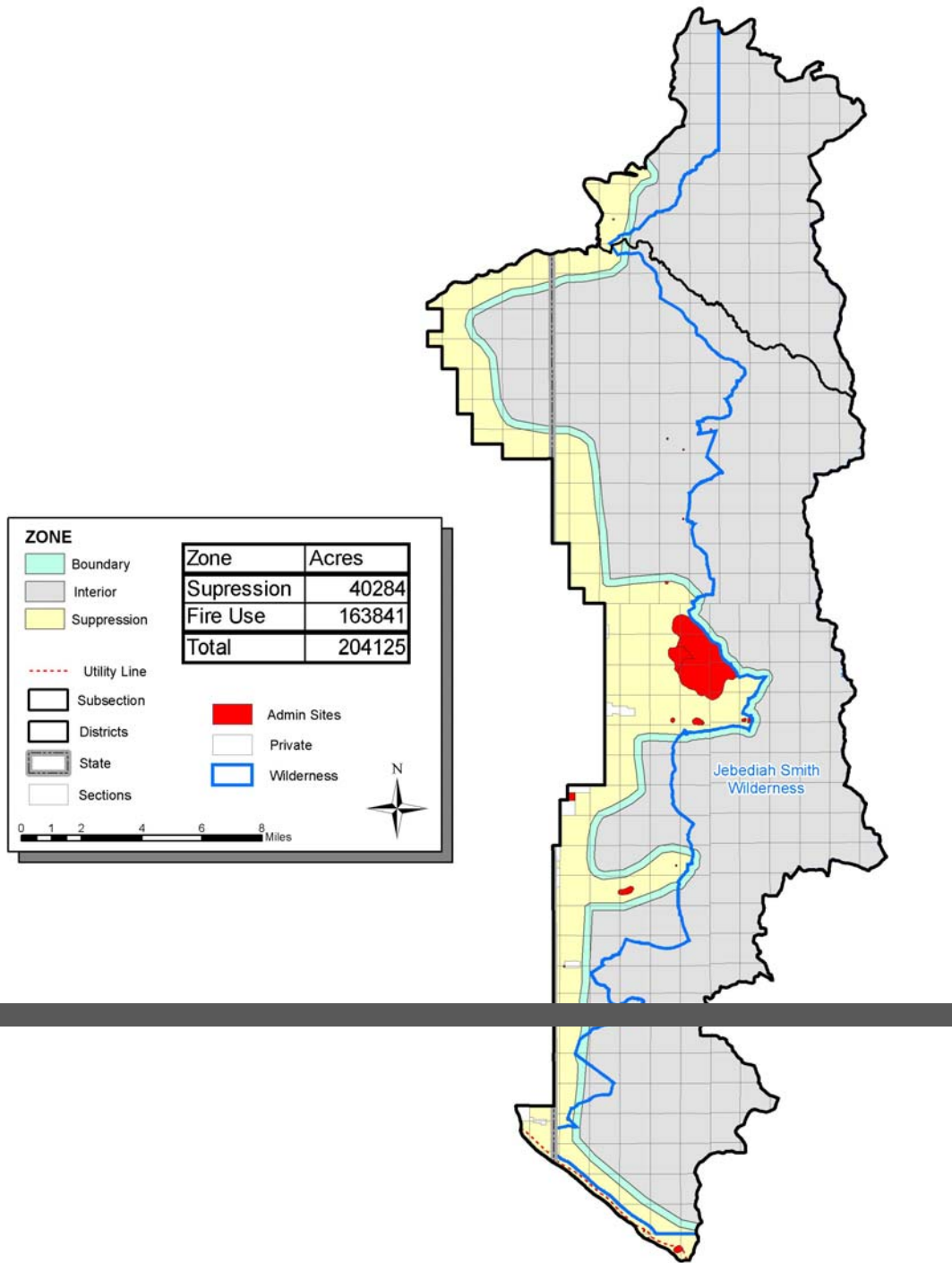
- **Boundary Zone** A ¼ mile boundary zone has been established in the TR FMA between the suppression zone and the interior zone. A boundary zone also exists in the BH FMA. Natural ignitions in the boundary zone before August 15<sup>th</sup> **and** >90<sup>th</sup> percentile 3-day average ERC are out of prescription. All ignitions occurring after August 15<sup>th</sup> are within prescriptive limits for this zone as well as ignitions occurring prior to August 15<sup>th</sup> with ERCs < 90<sup>th</sup> percentile. There is no Boundary Zone in the MP FMA.
- **Interior Zone** Natural ignitions occurring within the Interior zone should normally pass the initial decision criteria with regard to threat to life, property, or the management area boundary. Provided other criteria are met, ignitions in this area should proceed to the Stage II analysis.

In general, WFU events within the MP-FMA, IP, CM and LM FMA will utilize the Island Park weather station while WFU within the TR, CR and BH FMAs will use the Swan Valley, Pine Creek and Moody RAWS stations. All ERC plots from these stations utilize fuel model G. Exceptions to the default weather station can be made if conditions at the fire site are better reflected by some other station. The Pine Creek RAWS has recently been established Pine Creek Pass area. While having very little historical weather information, this station will likely better represent conditions in the TR FMA. The station was operational in 2002. The 3-Mile RAWS was established in 2001. Like the Pine Creek RAWS the station has little value for displaying historical trends due to the lack of data years but may prove useful for determining weather conditions within the LM FMA. Document rationale for station selection.

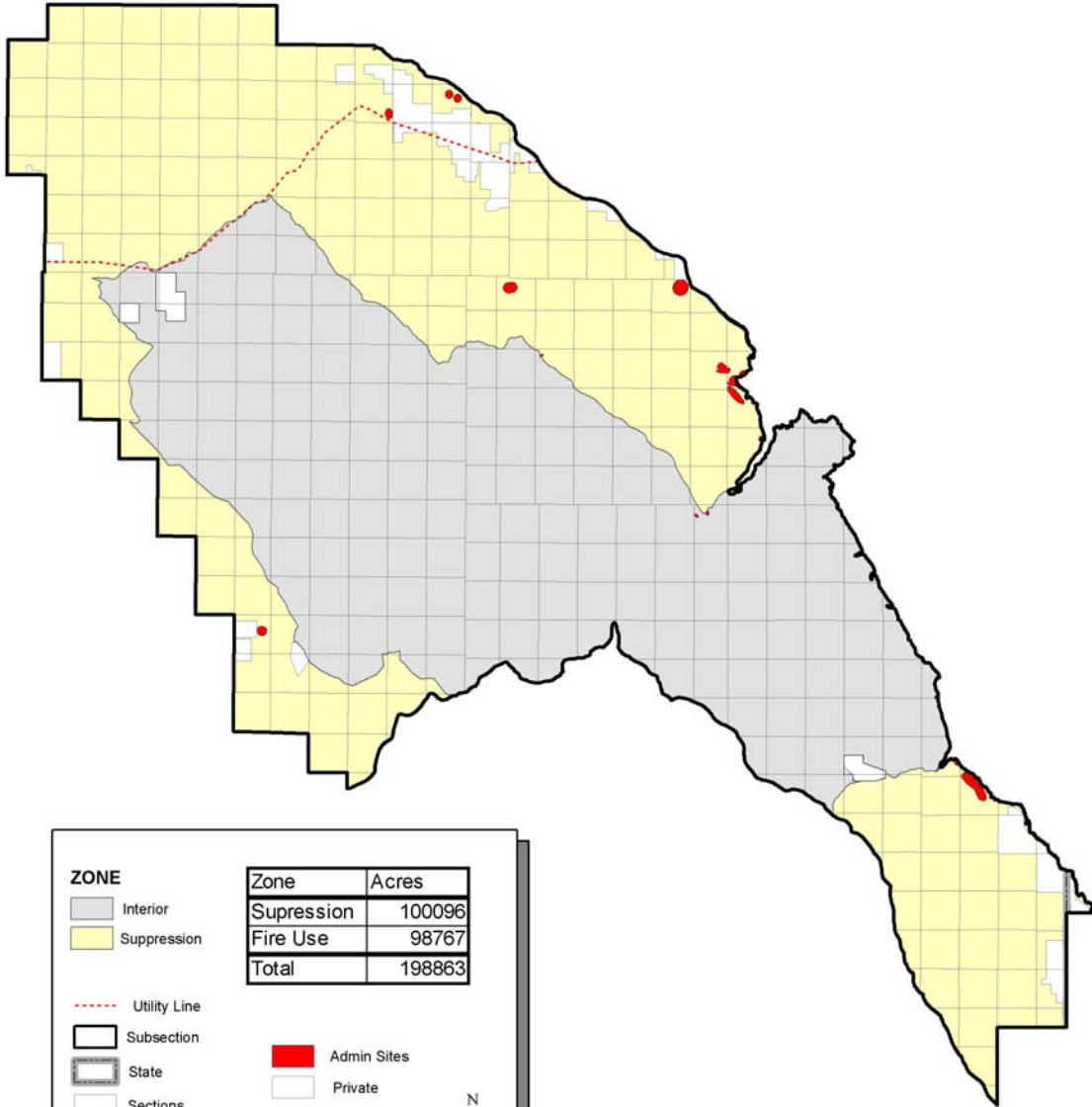
### MADISON PITCHSTONE (MP) RISK ZONES



### TETON RANGE (TR) RISK ZONES



### CARIBOU RANGE (CR) RISK ZONES



ZONE	
Interior	
Suppression	

Zone	Acres
Supression	100096
Fire Use	98767
Total	198863

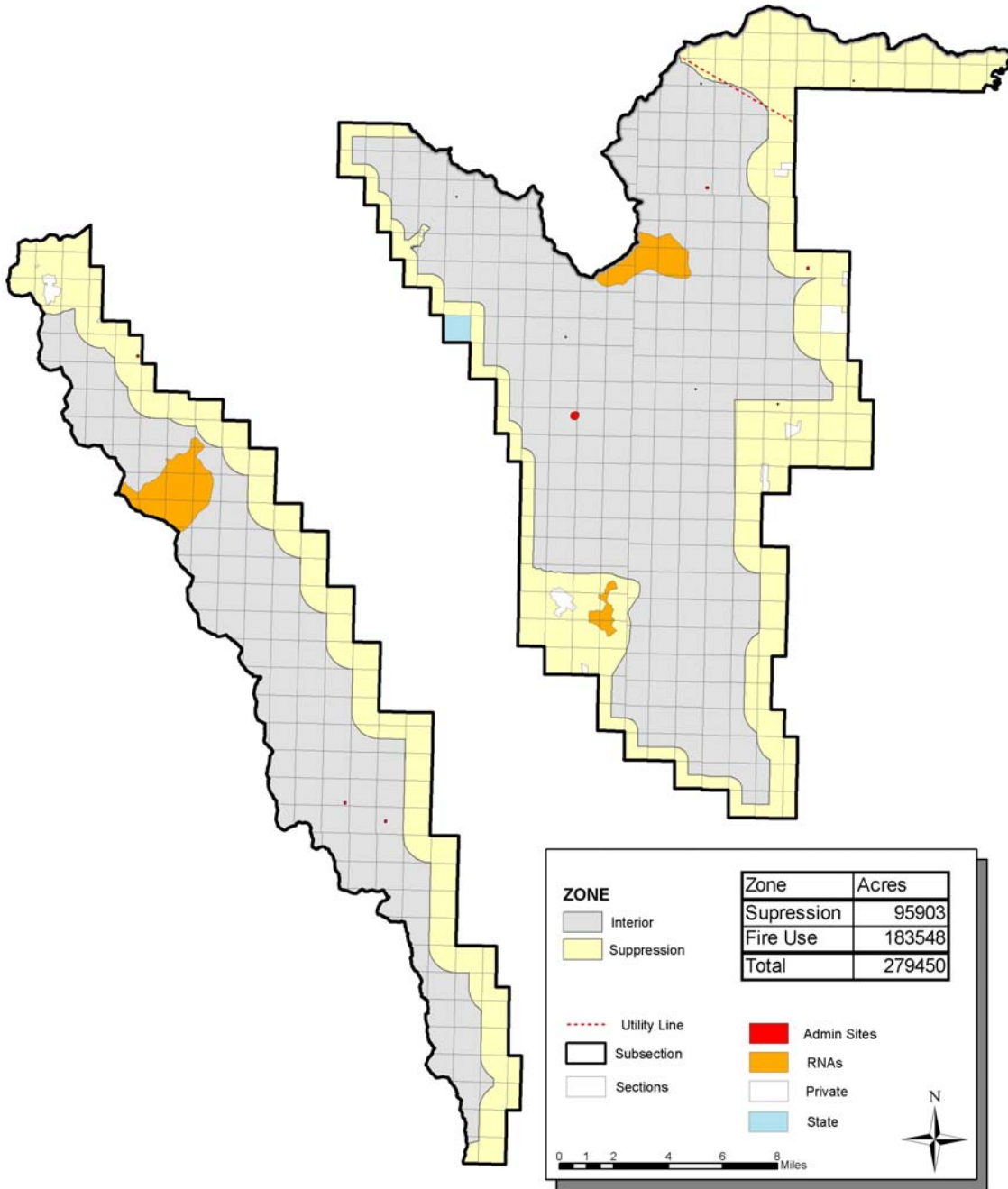
----- Utility Line  
▬ Subsection  
▬ State  
▬ Sections

Admin Sites  
 Private

0 1 2 4 6 8 Miles

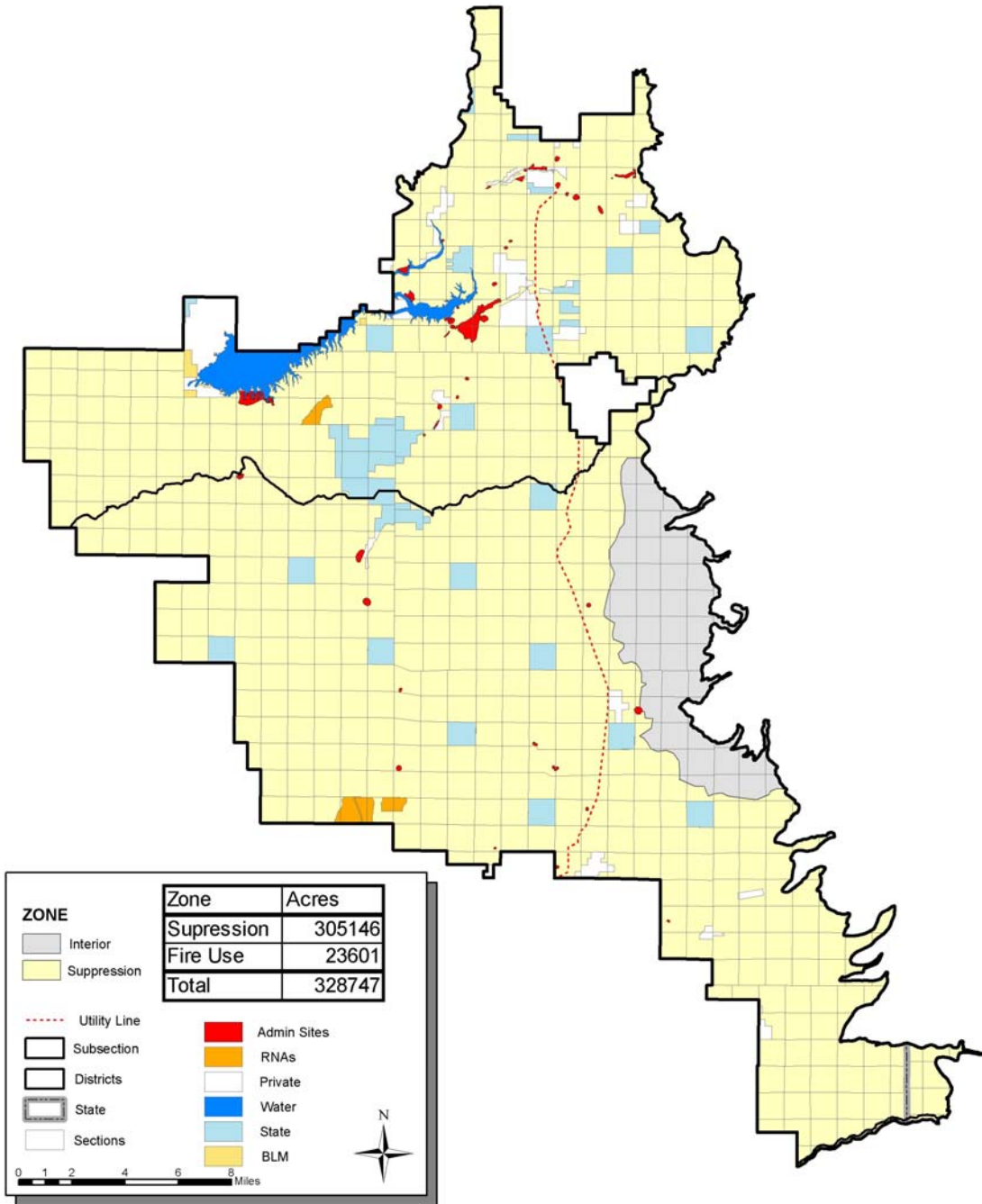
N

# LEMHI-MEDICINE LODGE (LM) RISK ZONES

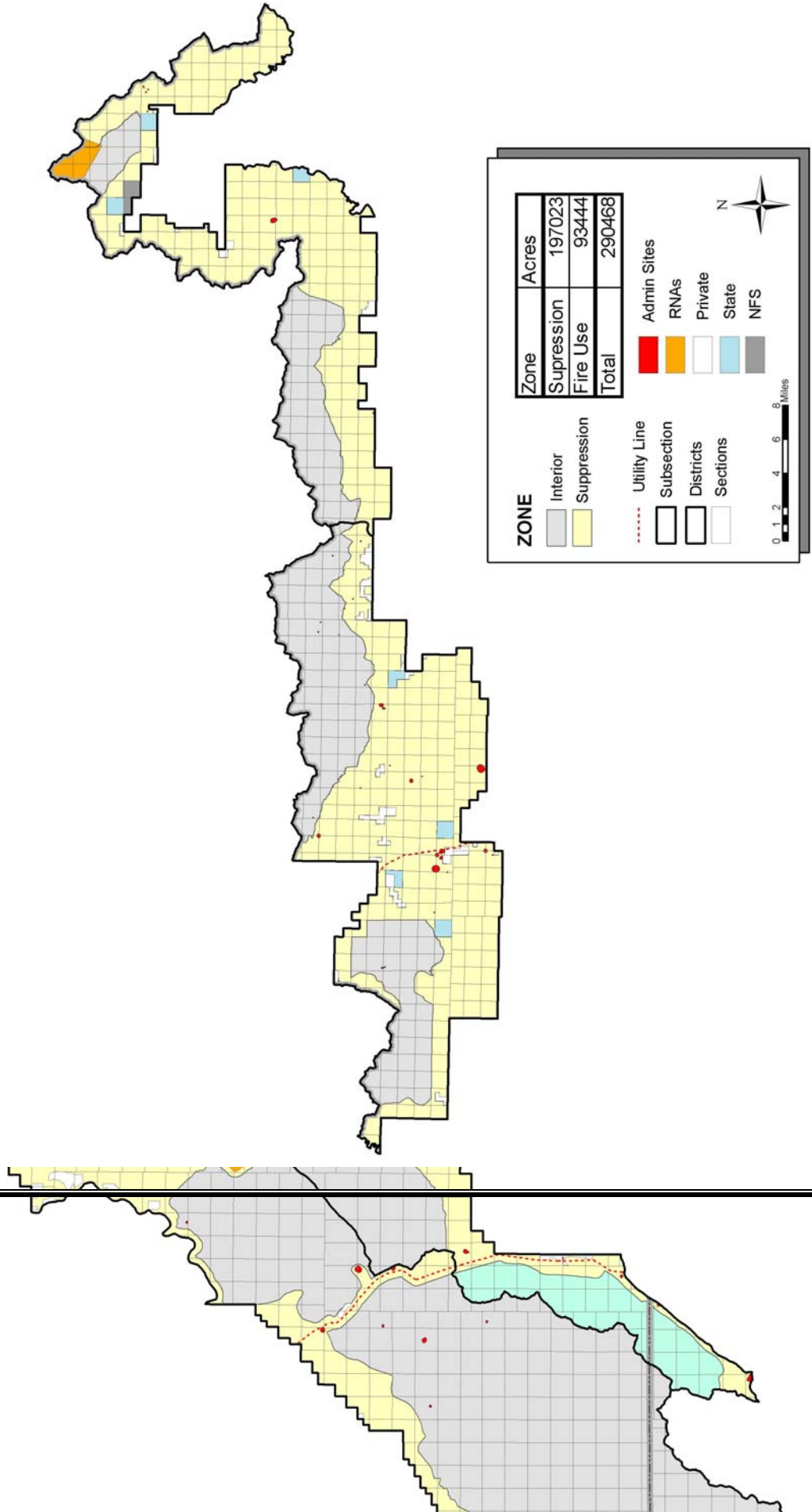




## ISLAND PARK (IP) RISK ZONES



### CENTENNIAL MOUNTAINS (CM) RISK ZONES



**BIG HOLES (BH) RISK ZONES**



## HISTORIC FIRE WEATHER CHARTS

The following graphs were generated from historic weather data for the Island Park (102105), Moody RAWS (102301) and Swan Valley (103101) weather stations. None of the current primary weather stations on the Forest represent weather at high elevation. The graphs display the Energy Release Component, 1000-hour fuel moisture, and Keetch-Byrum Drought Index values starting in 1970 for the Island Park Station and Swan Valley stations and 1982 for the Moody RAWS Station. A RAWS station has recently been installed in the Pine Creek Pass area. This station is located at approximately 7200 feet and when operational should better reflect higher elevation conditions.

The graphs were calculated with the program Firefamily Plus. This is a software system for summarizing and analyzing daily weather observations while computing fire danger indices based on the National Fire Danger Rating System (NFDRS). Three-day averages are used to eliminate noise in the data and smooth the line, which serves as the prescriptive limit. Averaging helps to eliminate being in prescription one day and out of prescription the next, particularly during the early and late season when fewer observations are recorded. When plotted, this method results in a graph, which reflects the curve of wetting and drying through the season. Current indices can then be compared with the historical plots.

Historically, weather observations have stopped as the fire season ended. Late season weather observations are skewed toward dry years in which fire activity continued into this period. As a result, the late season portion of the graphs generally indicates drier conditions than actually occurred on average.

### Energy Release Component

Energy Release Component is a measure of seasonal drying trends and includes both live and dead fuel moisture inputs. ERC is valuable for displaying fire risks and as an element of a fire prescription. Prescriptive criteria are based on fuel model G (dense conifer, heavy down dead), which, due to its greater 100-hour and 1000-hour time lag fuel components, better represents potential for extreme fire behavior in natural fuels. Fuel Model G's responsiveness to drying is not as rapid as fuel models C (open pine, grass understory) or H (short-needle conifer, sparse undergrowth).

The ERC graph developed for the Caribou-Targhee Fire Use Guidebook represents current and historical weather conditions to provide a reference when evaluating fire management options.

The gray line on the graph is the 3-day average for the data. This line reflects the average of the ERC values for the day in question and the two previous days, for all available data.

The maximum ERC line (red) represents the highest ERC observed for that date.

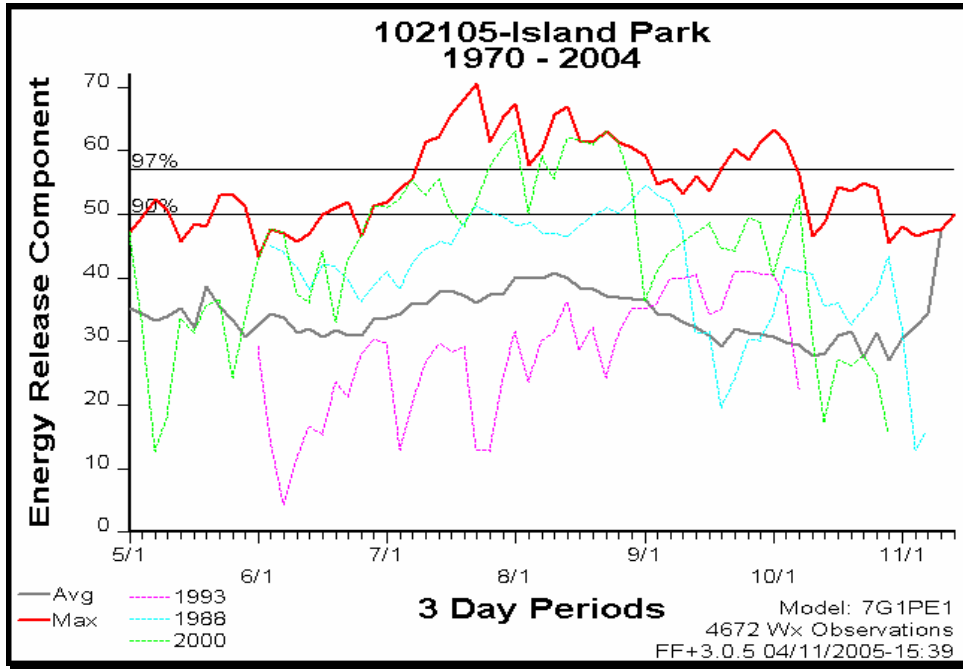
The final two lines are the 3-day average lines for the year 1993, a relatively wet year (dotted pink line), 1988 and 2000, relatively dry years (dotted teal green line and dotted green lines respectively). These lines are provided as a basis for comparison. By comparing current ERC values to the 1993, 1988, and 2000 values, Fire managers can make some general expected fire behavior assumptions and ascertain trends in the current fire season.

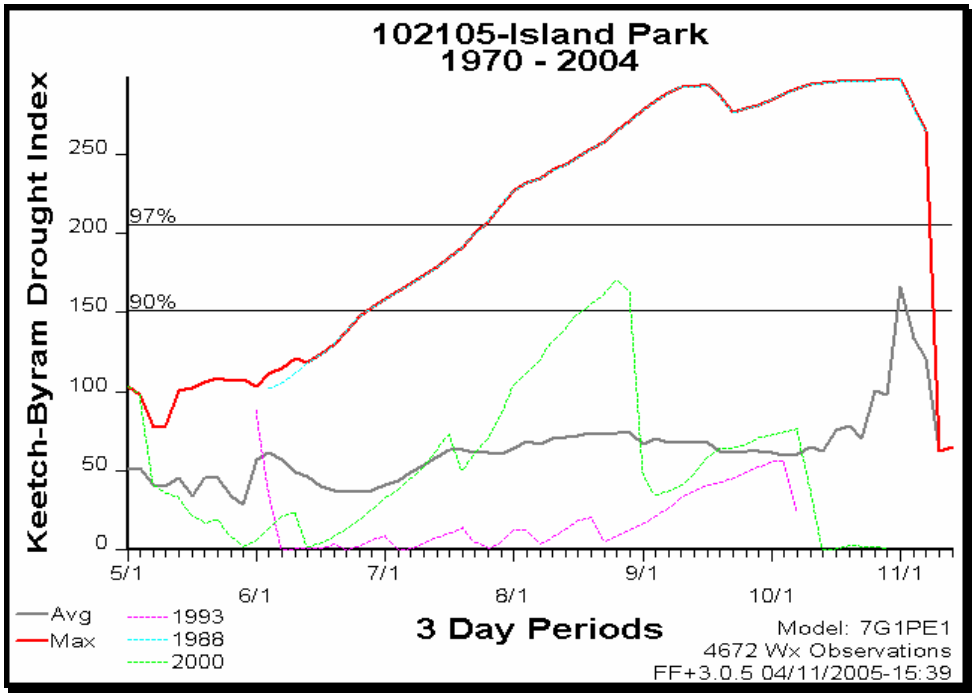
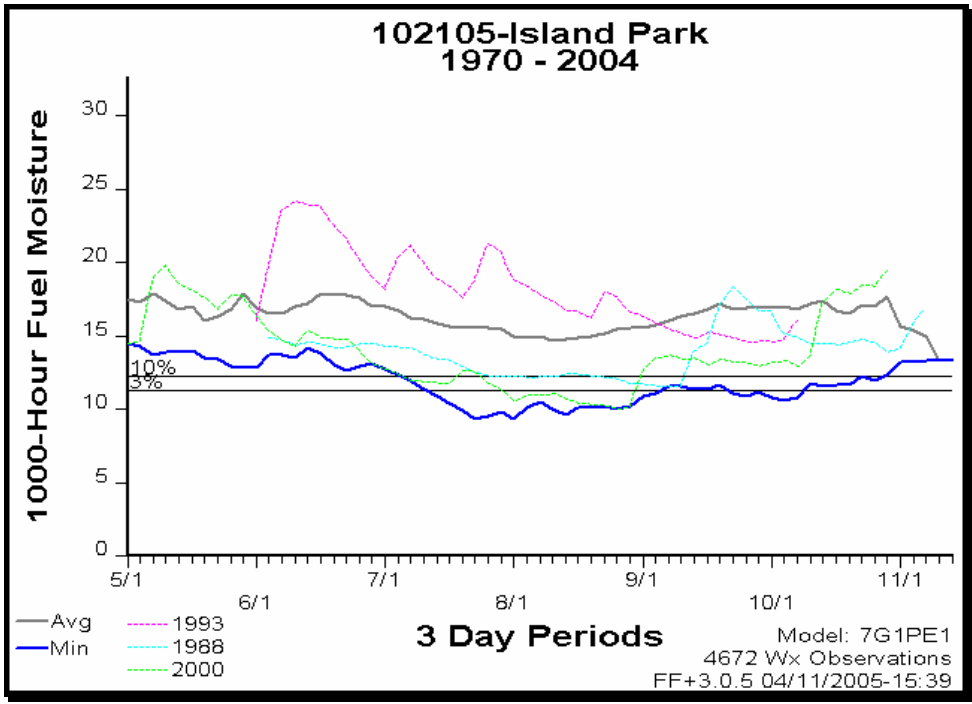
Current year ERC can be added by plotting the three day average using a separate color on the chart. By adding up to date weather data to the weather file used by Firefamily Plus, a current year ERC can be generated. Weather files are currently updated biweekly by personnel at EIFC during fire season and are posted on the K drive at K/fire/historical data/targhee.mdb.

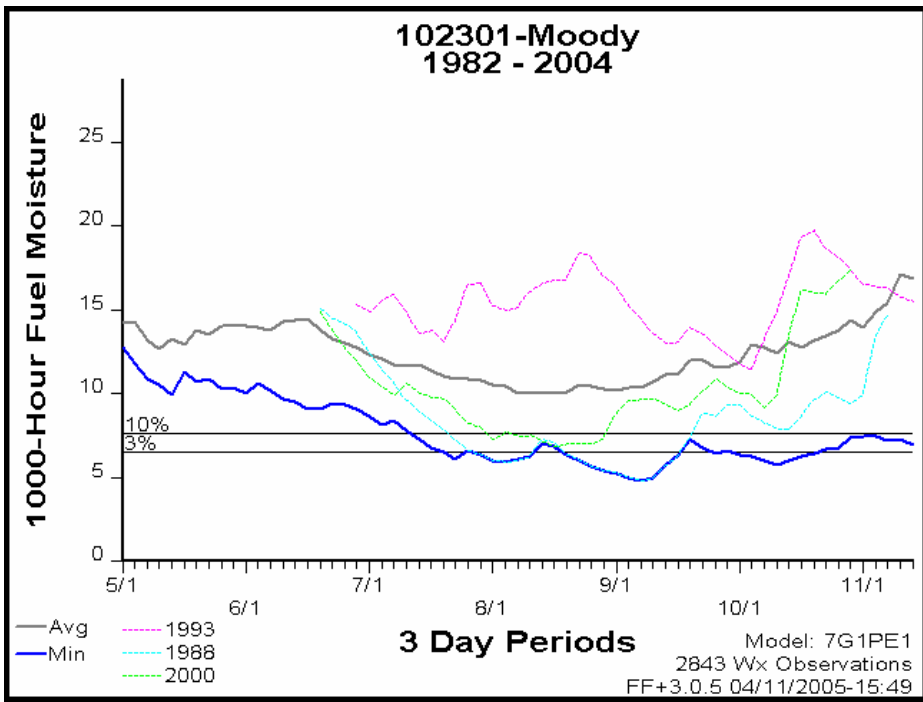
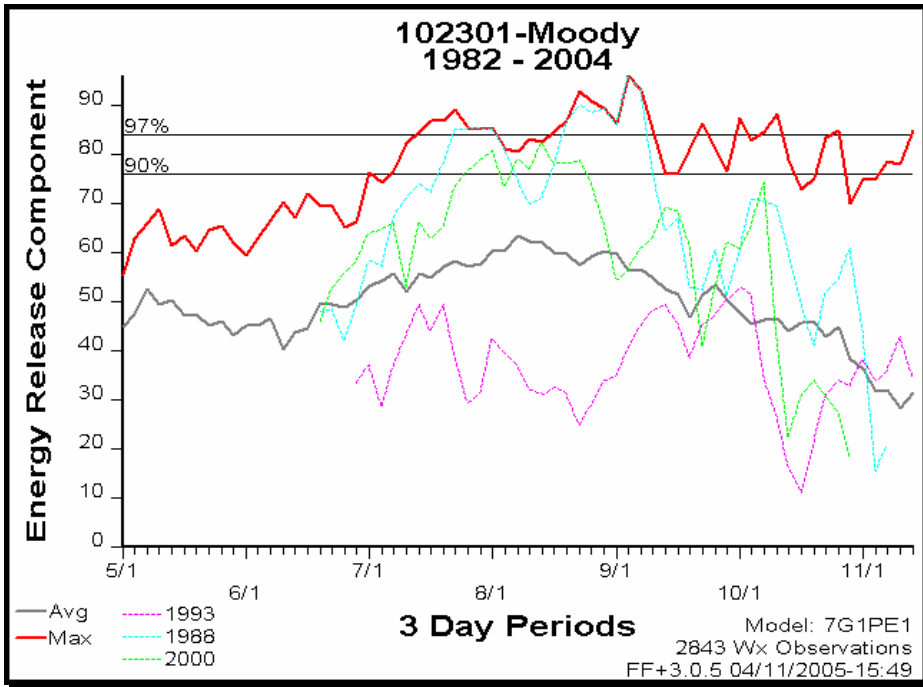
### 1000-Hour and Keetch-Byrum Drought Index

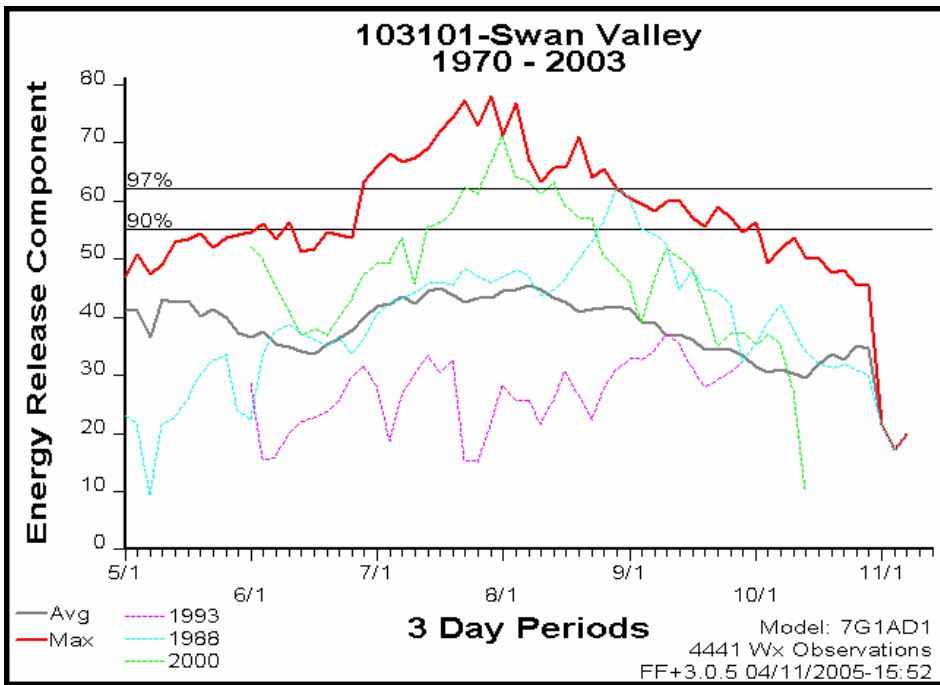
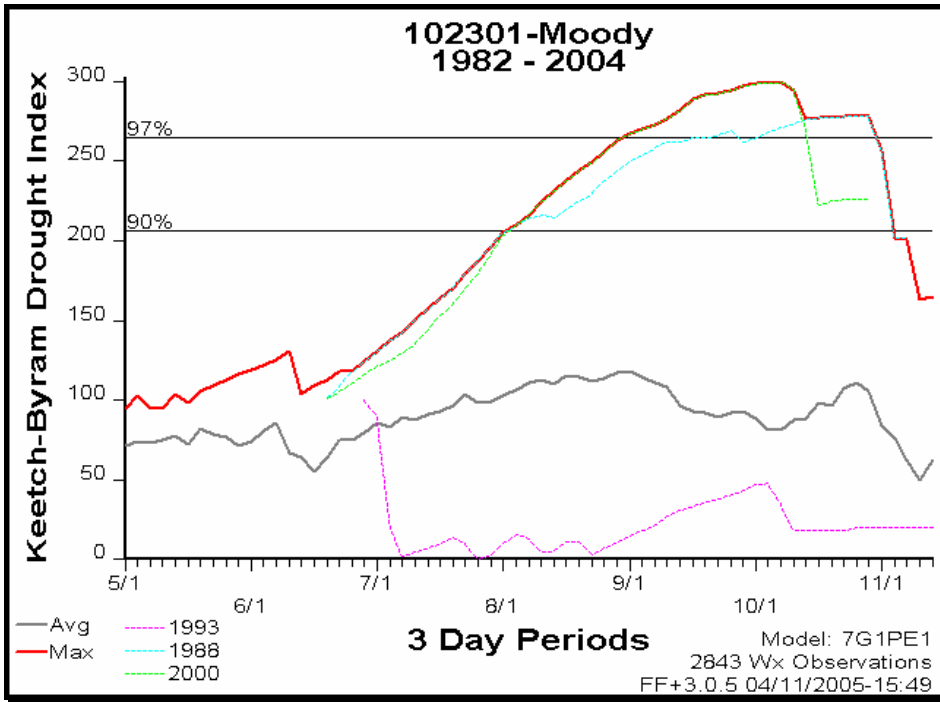
The 1000-hour graph is an indicator of long-term seasonal drying. Keetch-Byrum Drought Index represents the net effect of evapotranspiration and precipitation in producing moisture deficits in deep duff and the upper soil layers.

The graphs generated for 1000-hour fuel moisture and Keetch-Byrum Drought Index are similar to the above description for ERC. Both include an average line plot and the 1993 (wet year) and 1988 and 2000 (dry years) plots for historical comparison. The KBDI includes a maximum, 90th and 97th percentile plots, while the 1000-hour graph includes minimum and 10th and 3rd percentile plots.

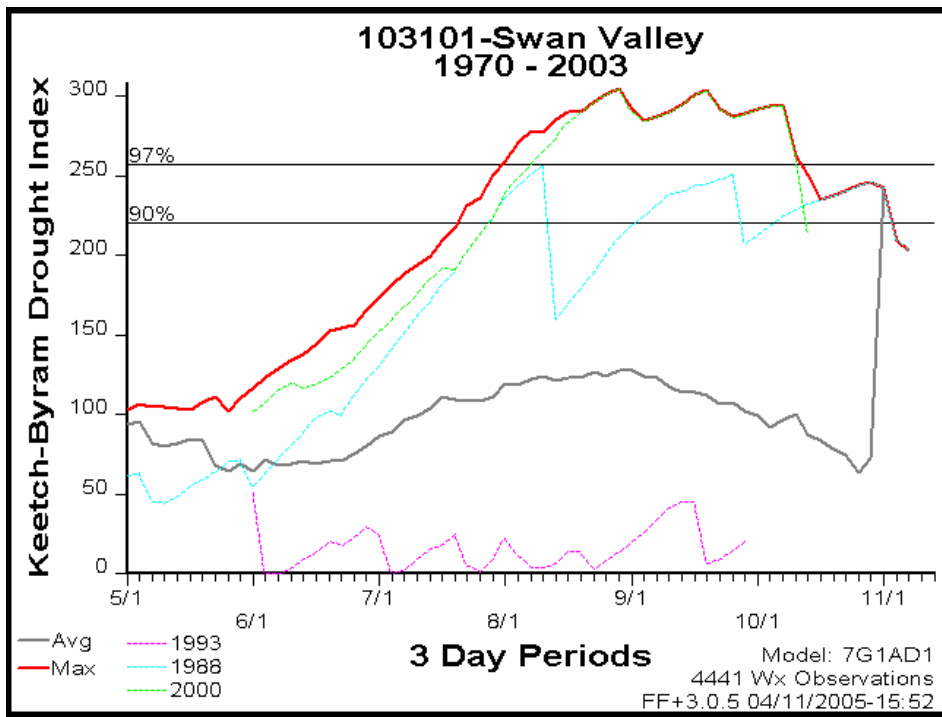
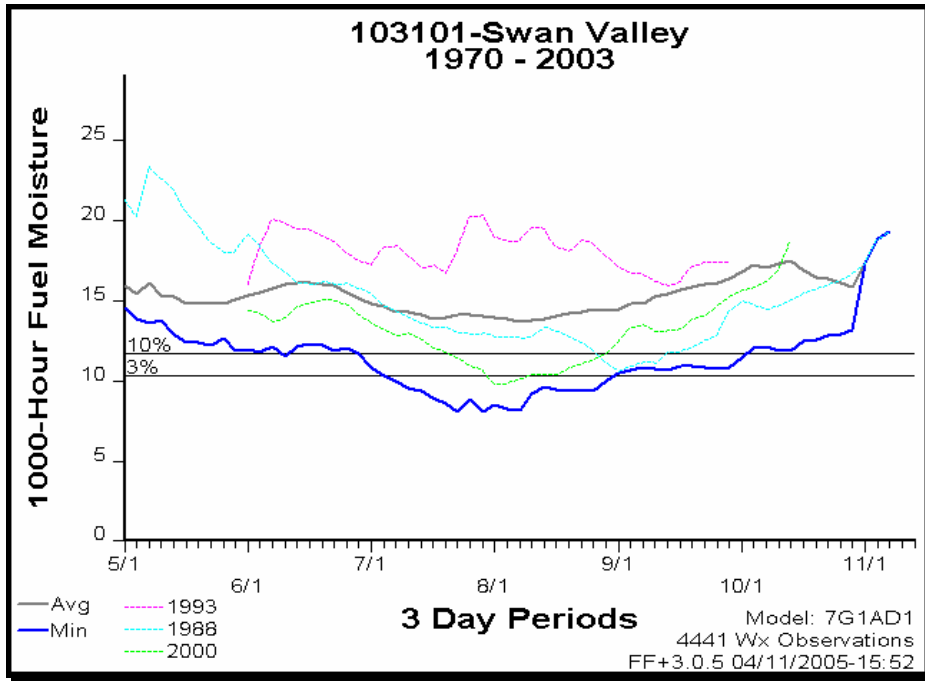












**Periodic Fire Assessment**

<b>se:</b>	<p><b>valuate and document:</b></p> <ul style="list-style-type: none"> <li>▪ <b>the capability to manage the fire to meet resource benefits,</b></li> <li>▪ <b>relative risk,</b></li> <li>▪ <b>management organization, operational, and personnel qualification needs; and</b></li> <li>▪ <b>the WFIP planning level required to meet identified needs.</b></li> </ul> <p>Periodic Fire Assessment is completed on a set schedule in conjunction with WFIP Stages.</p>
<b>ation Source:</b>	<p>Monitoring information, risk assessment results, current fire activity, fire size, fire danger indicators, time period of fire season, fire behavior forecasts, and Agency Administrator and staff input.</p>
<b>ted Completion Time:</b>	<p>our</p>

### Wildland Fire Management Plan - Stage II:

<b>se:</b>	<p><b>resents specific management objectives, describes the Fire Situation and related management concerns, identifies management actions, estimates costs, and documents the Periodic Fire Assessment.</b></p>
<b>ation Source:</b>	<p>ives = developed from staff input and Fire Management Plan.</p> <p>uation = information available from monitoring the fire, weather observations, or forecasts.</p> <p>ssessment = the minimum risk assessment required is the output from the identified fire relative risk assessment completed in the Periodic Fire Assessment.</p> <p>ement actions = developed from staff input commensurate with predicted fire behavior, risk assessment, fuel types, fuel continuity, overall objectives, and defined management concerns.</p> <p>ted Costs = developed from staff input, based on identified management actions and resources needed.</p>
<b>etion Time:</b>	<p>ments of WFIP Stage II must be completed within 48 hours of need as indicated in the Periodic Fire Assessment.</p>

### Wildland Fire Implementation Plan - Stage III:

<b>se:</b>	<p><b>ment a risk assessment and provide implementation actions necessary for the management of a wildland fire to accomplish identified objectives over a typically long-duration.</b></p>
------------	---

age provides a definition of the acceptable management limits of individual fire fires, or fire complexes represented by the Maximum Manageable Area (MMA). It considers long-term fire behavior predictions and risk assessments and supports decision making. It identifies threats from the fire and addresses operational actions to prevent or eliminate those threats.

**Information Source:**

Expertise, experience, knowledge, maps, monitoring data, fire behavior prediction, assessment, and operational evaluation and identification of tactics and resources. Staff negotiated and developed from objectives, maps, on-the-ground evaluation, observation, monitoring, or as set by the FMP.

**Information Time:**

Stage III of the Wildland Fire Implementation Plan must be completed within 7 days from when the Periodic Fire Assessment indicates the need. The Agency Administrator can direct it to be completed before the Periodic Fire Assessment does.

## MMA DECISION AUTHORITY

As previously stated, decision authority to approve wildland fire use lies with the Forest Supervisor, but may be delegated to a District Ranger, but only if the District Ranger has the requisite fire management knowledge, experience, and staff available (FSM 5140.42). In order to ensure management oversight, the districts will forward copies of approved WFIPs to the Fire Staff at the Supervisor's Office, who in turn forwards copies of the plans to the Regional Fire Use Specialist. When a fire is expected to burn on two or more agency jurisdictions, all affected Agency Administrators will approve the WFIP (GYACG 2000).

MMA's that cross administrative and/or jurisdictional boundaries require approval from all the affected units. The following outlines the necessary approval authority:

- MMA's exclusively on one Ranger District: Forest Supervisor or delegated District Ranger have WFU approval authority.
- MMA's on two Ranger Districts of the same forest: Forest Supervisor, or both District Rangers who have been delegated the authority for WFU approval. The District where the WFU originated will be responsible for management, unless otherwise agreed upon in writing.
- MMA's on two or more forests: Each Forest Supervisor or all District Rangers who have been delegated the authority for WFU approval. The district recommending the WFU approval shall take the lead in developing the WFIP, with input from the other affected districts. The lead district will be responsible for management of the WFU unless otherwise agreed to in writing.
- MMA's on one or more forests and National Parks: Each Forest Supervisor and Park Superintendent or their designees who have been delegated authority for WFU approval.

### MMA Determination

All wildland fires being managed under appropriate management response strategies where WFIP planning has progressed to Stage III will have a defined MMA. This is to ensure that there is clear and common understanding of the authorized size and location of the fire among agency administrators and cooperators.

The MMA delineates the ultimate acceptable size for a given wildland fire. It provides for closely directed fire management application in a specific area defined by resource objectives, fire and weather prescription elements, social needs, political considerations, and management capability.

All MMAs will:

- Be based on predetermined MMAs or be developed as part of a WFIP, Stage III.
- Be fixed and not subject to change once established and approved by the agency administrator
- Serve as definition of firm limits of management capability to accommodate the social, political, and resource impacts for all wildland fire managed for resource benefits or other management considerations.

**Note - the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide provides the following direction:** *The complex nature of fires and land management precludes the ability of managers to write a set of guidelines or directions that cover all the potential situations. Past experiences and recognition of potential future situations require the following considerations regarding the rigid nature of drawing lines on a map.*

*There may be isolated cases where formal implementation of the Wildland Fire Situation Analysis (WFSA) process is not prudent or logical because a wildland fire exceeded the MMA. In these situations, experience may indicate that the MMA will be exceeded by the wildland fire on a very small or non-threatening scale. Management options in this situation include:*

- *Constraining the fire spread to the small or non-threatening overrun of the original acceptable area using the available holding forces, and identified in the WFIP, Stage II or III. This must be accomplished within two burning periods.*
- *In the case of relatively long-range spotting, treat an isolated spot generated by this natural process as a separate fire. Determine the appropriate management response for this new ignition separately from the original wildland fire, based on criteria specific to the new ignition.*

If the agency administrator and FUMA determine that the fire cannot continue to be managed within the original approved boundary, a WFSA will be utilized to analyze new strategic and tactical alternatives, and to select an appropriate management response.

The following information clarifying MMA implementation was taken from the USDA Forest Service Fire and Aviation web page: <http://www.fs.fed.us/fire/fireuse/rxfire/5140/index.html>

## A DETERMINATION WITH MULTIPLE FIRES

Recent interpretations and 1` applications of the Federal Fire Policy have produced some conflicting opinions. Those conflicts -- regarding determinations made in completing the Wildland Fire Implementation Plan (WFIP) for wildland fire decisions that do not result in direct control actions -- are complex and require additional direction. There continues to be discussion regarding the intent and definition of the Maximum Manageable Area (MMA). Reference the definition provided in the Implementation Guide, FSM 5140.32, Chapter 3, page 12. Those needing additional interpretation of this term and its application are encouraged to contact [Dave Bunnell](#).

The MMA applies to a single wildland fire or complex of fires, depending on the direction and provisions contained in the WFIP Stage III analysis. The MMA represents the quantification of management capability and the potential to accommodate fire activity within a specific area defined by the MMA perimeter. Completion of this step provides a measure for success in evaluating the effectiveness of the WFIP. Success of the WFIP will be measured by the management of the fire within planned limits and management capability described in Stage III. Unsuccessful management will be measured as the inability to manage the fire under planned strategies, tactics, and limits described in Stage III analysis. Fire activity is the combination of actual fire movement and the associated actions taken to influence the spread and intensity of the fire. Management capability may be defined as the combination of both direct actions required to manage fire perimeters and associated actions required to manage recreation use, personnel safety, notification, logistics, operations, coordination, and protection of resources (such as bridges, camps, lookouts, cabins) if required.

The examples below provide guidance for several situations that have a high probability of occurring. The intent of these interpretations is to provide consistency in process application, reduce confusion over policy, and increase efficiency. The Implementation Guide provides policy for the process of developing the Wildland Fire Implementation Plan, and three distinct analysis stages are outlined. The examples provided in this enclosure are negotiated decisions provided to increase specific interpretation of various scenarios that have been encountered. It is recognized that many others exist and will eventually be encountered for which there is no inclusive direction or guidance provided. It is suggested that using your best judgment based on experience and close adherence to what is provided by policy and interpretive example will produce positive results.

## BASIC IMPLEMENTATION DETERMINATIONS

The following situations have occurred in past implementations involving wildland fire use and confinement suppression fires. These examples are based on the primary assumption that the Stage III analysis step has been completed or that the appropriate Line Officer (Agency Administrator) determines the need for Stage III analysis for any fire or group of fires.

### DETERMINATION 1:

For wildland fire occurring in areas approved in FMP for wildland fire use, and for a wildland fire determined by the Stage I analysis of the WFIP to meet resource management objectives:

1. Develop an MMA in association with Stage III portions of the WFIP; or
2. Utilize a predetermined (predesignated) MMA identified in the FMP at Stage III



Figure 1

**NOTE:** Develop an MMA and Stage III WFIP for a wildland fire where the

appropriate management response is determined to be confinement suppression strategy and the fire activity has not exceeded initial attack or management capability. SEE FIGURE 1.

#### DETERMINATION 2:

Additional wildland fires may ignite within a predesignated MMA or within an MMA developed by WFIP Stage III. Additional wildland fire(s) occurring within an MMA designated in an approved Stage III WFIP will be evaluated individually to determine whether they meet the operational constraints described in the original WFIP on a spatial, temporal, and management capability basis. If so, the additional fire(s) can be included in the original WFIP. If not, a separate WFIP must be developed (Determination 3) or an appropriate response suppression must be implemented. SEE FIGURE 2.

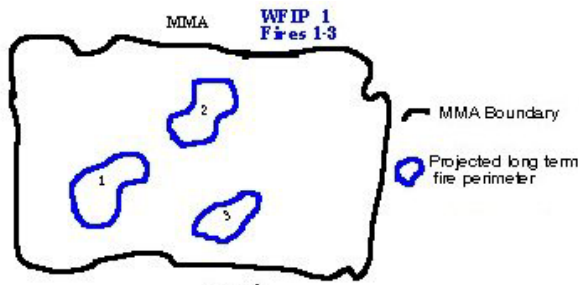


Figure 2

**NOTE:** When two or more wildland fires are managed under the same strategy, they may be reported individually or in combination as a complex of fires.

#### DETERMINATION 3:

For a new wildland fire use fire(s) occurring within an established MMA under an approved Stage III WFIP that is determined not to meet the management constraints of the existing WFIP. If an existing WFIP cannot accommodate a new fire determined in Stage I for wildland fire use, and due to a changed condition in spatial, temporal, management capability, or fuels and weather conditions, the fire is identified to be managed for wildland fire use through the **Go / No Go** decision process of Stage I analysis:



Figure 3

1. Develop a new Stage II and Stage III WFIP, when needed.
2. Develop a new MMA to accommodate fire activity anticipated by the new fire and associated management actions within the MMA boundaries. (See Figure 3)

**NOTE:** If wildland fires 1, 2, and/or 3 exceed the original MMA 1 boundary and cannot be returned to planned management capability as described in WFIP 1, then it (they) will be measured as unsuccessful and a WFSA will be used to determine the appropriate suppression response.

#### DETERMINATION 4:

When a new fire starts within an existing MMA and is determined not to be manageable for resource benefits in the Stage I analysis portion of the WFIP, select and implement an appropriate management response by either:

1. Initiating aggressive initial attack actions; or
2. Initiating a WFSA process when current or projected initial attack or management capability is exceeded; or
3. Prepare to implement Stage II and III of the WFIP if the decision is made to implement a confinement suppression strategy. (Reference Determination 1 Note)

If a wildland fire within a MMA, managed under an approved WFIP is anticipated to exceed, or exceeds the MMA boundary and cannot be returned to planned management capability (re: Implementation Guide, page 50), then the fire(s) will have exceeded planned limits and a WFSA must be prepared that:

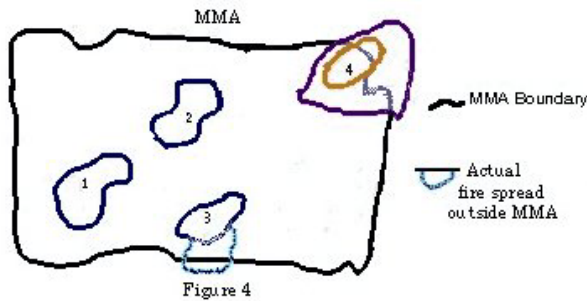


Figure 4

1. Selects and directs the implementation of an appropriate suppression alternative; and
2. Requires that the total fire(s) area be managed under the selected suppression alternative. (See Figure 4)

**(MULTIPLE FIRE PROGRAM CAUTION)  
DETERMINATION 5:**

When a new fire start will potentially (based on most severe fire spread calculations) overlap two or more existing MMA's, follow directions provided in Determination 3. Caution is advised because of the added complexities of managing multiple wildland fires occurring in overlapping MMA's; these situations can quickly exceed management capabilities. (SEE FIGURE 5)

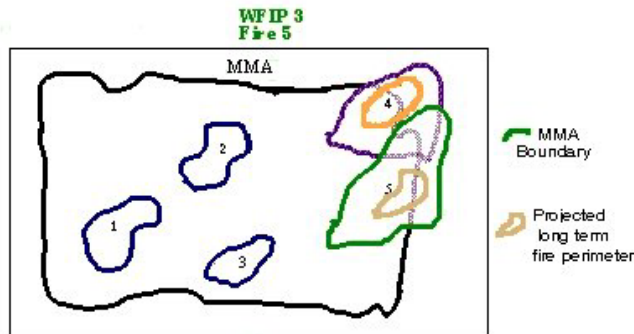


Figure 5

**NOTE: The complexity of managing fire (5) offered in this example is difficult to quantify. Experience in past management actions has occasionally produced confusion and poor results. In many cases, quick suppression actions may resolve these potentially confusing management scenarios.**

Trade-offs in resource benefits potentially gained by the new wildland fire use may be offset by potential losses incurred if one or more of the previous wildland fire use fires are converted to a suppression response due to management focus on the newly designated wildland fire use and MMA.

**DETERMINATION 6:**

Multiple fires occurring in a short timeframe (24 hours) where no current approved MMA and WFIP (Stage III) currently exist. When multiple ignitions occur in a short timeframe, they may be managed under a single WFIP, or each fire may be analyzed individually. (SEE FIGURE 6)

Each individual fire start must be evaluated through Stage I analysis to determine the appropriate management response. All fires selected for wildland fire use objectives may be managed together as a complex of fires. All fires in the complex may be managed together, regardless of strategy selected. Reporting requirements for the complex will be the same as for individual fires. Periodic assessment will determine which fire(s) require Stage II or Stage III analysis or WFSA preparation. (SEE FIGURE 7)

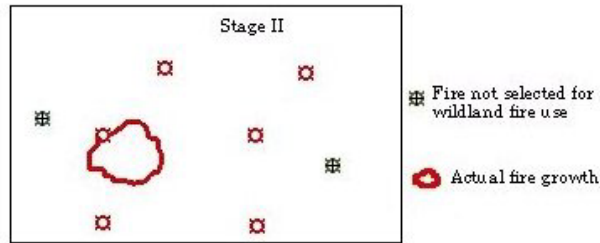


Figure 7

An MMA must be developed in conjunction with these fires at the time they are summarized as a complex and/or when any single fire in the complex requires Stage III analysis. The WFIP will then be fully developed with specific management actions determined for each individual fire area. (SEE FIGURE 8)

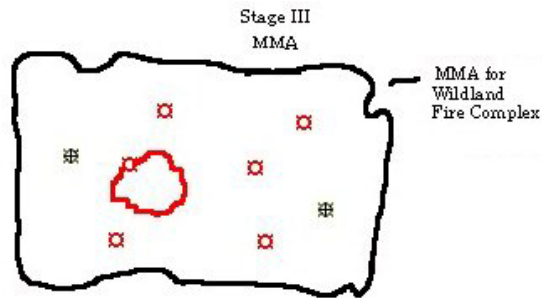


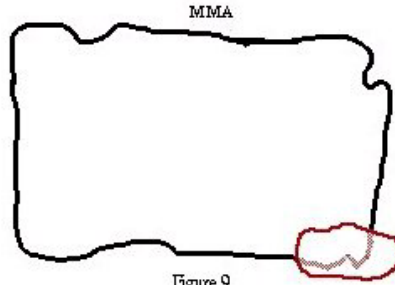
Figure 8



**DETERMINATION 7:**

Recent program analysis suggests that some unsuccessful wildland fire use management actions can be categorized by the following situations. In an effort to minimize unsuccessful wildland fire use decisions, the following situations should be closely evaluated and trade-offs identified in the Go / No Go phase of the Stage I analysis:

1. When a new wildland fire(s) is located in close proximity to an area not planned for wildland fire use.
2. When the designated MMA is defined to accommodate fire activity that is substantially below historic fire sizes documented in the affected fire regime(s).
  1. Analyze the risk of unsuccessful management actions and actions required for mitigation as well as costs and loss estimates.
  2. Develop and describe potential results of successful and unsuccessful actions.



The intent here is not to eliminate boundary fires from achieving resource benefits. The direction is to ensure that line officer recognition is clear and apparent regarding the risk of implementation. (SEE FIGURE 9)

## IMPLEMENTATION

### REQUIRED SKILLS AND QUALIFICATIONS

Wildland fire management is complex and demanding. Certain skills and qualifications are necessary to successfully plan and implement a wildland fire use program. The minimum national skills, knowledge, standards, and physical qualifications for each position required for fire use implementation are outlined in the Wildland Fire Qualification Subsystem Guide, NWCG, PMS 310-1 (see FSM 5108 for further information on this guide) and the Wildland Fire Qualifications Handbook, FSH 5109.17. The following table illustrates the *minimum* qualification requirements for planning and implementation at each stage of the WFIP process

**Table 25 WFIP planning and implementation minimum qualifications. Agencies or individual units may choose to require higher qualification levels.**

WFIP Stage	Minimum Planning Qualifications	Minimum Implementation Qualifications
Stage I	Zone Duty Officer	Incident Commander Type 4 (ICT4)
Stage II	Fire Use Manager Type 2 (FUM2)	Fire Use Manager Type 2 (FUM2) (Use Fire Use Manager Decision Chart to determine type)
Stage III	Fire Use Manager Type 2 (FUM2)	Fire Use Manager Type 2 (FUM2) (Use Fire Use Manager Decision Chart to determine type)

Line officer delegation of authority to approve Wildland Fire Implementation Plans (WFIP) and implementation positions are the two categories of qualifications concerning management of the WFU program. Each Forest Fire Management Officer and Forest Supervisor will review designated personnel that are delegated the authority for WFU approval on an annual basis. Training, experience, and knowledge will be part of this review prior to issuance of the delegation of authority letter. Line officers must meet the standards outlined in R4 supplement 5100-2001-5 5140.42 (See Appendix F).

Every wildland fire used to achieve resource objectives requires that the line officer designate a Fire Use Manager (FUMA) who is directly responsible for all aspects of the Wildland Fire Implementation Plan (WFIP) (FSM 5145.3). The FUMA may individually manage multiple fires that do not require significant staffing, external communication, or holding resources for plan implementation, or the FUMA may be the leader of a specialized team needed to manage one or more complex fires. An individual FUMA must be assigned for each wildland fire requiring Stage III analysis described in the Implementation Guide (FSM 5143.32). As complexity increases, consideration should be given to assigning a formal team. Indicators of increasing complexity include: safety, the number of fires being managed, acreage increases, anticipated severe weather, increasing coordination needs, smoke issues, threatened resources, and logistical demands. Fire Use Management Team (FUMT) leaders, Type I or II Incident Commanders may also be designated as FUMAs when they have completed appropriate fire use training (FSM 5145.31). In the case of a long duration fire where the FUMA needs to be relieved due to consecutive days of service, the replacement must be designated by a line officer at the same level of authority as made the initial FUMA assignment.

When required by the Implementation Guide (FSM 5140.32), long-term fire behavior predictions, based on the best scientific process available must be provided by a Long Term Fire Analyst (LTAN) or Fire Behavior Analyst (FBAN) with experience in long-term fire behavior prediction.

The Fire Use Manager (FUMA) or formal team leader determines, through development of the WFIP, the organization and expertise necessary to successfully manage wildland fire(s) to meet resource objectives.

The organization required to implement fire use projects is based on the complexity of the project, the number of fires burning, and the resources available at any one time. On less complex projects, one person may perform multiple duties simultaneously. More complex projects require more highly qualified personnel. The required organization must be delineated in the approved Prescribed Fire Burn Plan (RxBP) or Wildland Fire Implementation Plan (WFIP). Two levels of Fire Use manager have been identified. In general, a FUM 1 is required for incidents progressing to Stage 3. Qualifications for FUM1 and FUM2 are described in their entirety in FSH 5109.17.

Requirements of the FUM1 position include required training and:

- Qualification as a Prescribed Fire Burn Boss 1 (RxB1) and
- Satisfactory performance as a Fire Use Manager on a wildland fire incident used to achieve land use objectives **OR**.
- Incident Commander Type 2 **AND**
- Prior successful management of wildland fire use and/or confinement strategies and tactics, **AND**
- Satisfactory performance as a Fire Use Manager on a wildland fire incident used to achieve land use objectives.

Requirements for the FUM2 position include required training and:

- Prescribed Fire Burn Boss Type 2 **AND**
- Satisfactory position performance as a Fire Use Manager on a wildland fire incident used to achieve land use objectives **OR**
- Incident Commander Type 3 **AND**
- Prior successful management of wildland fire use and/or confinement strategies and tactics **AND**
- Satisfactory position performance as a Fire Use Manager on a wildland fire incident used to achieve land use objectives

In addition, a FUMA must have successfully completed a suitable fire use course at the Regional or National level, such as Advanced Fire Applications, S 580. The required fitness level is moderate. Only assignment as FUMA maintains currency (FSM 5145.31).

Along with the Fire Use Manager and District Ranger involvement, participation in developing the WFIP and managing the WFU may also include local specialists familiar with issues and policies associated with the fire management unit and the wildland fire use program.

These specialists may include but are not limited to:

- Wilderness Resource Specialist - provides input on resource issues and impacts. May assist in development of the MMA.
- Aerial Monitor - usually a person familiar with local conditions such as the regular Forest aerial observer. May have the need for an ICS-qualified FOBS or FBAN.
- Resource Advisor - not necessarily ICS qualified; may include other specialists such as wildlife or fish biologist, soil scientist, hydrologist, or archaeologist.
- Technical Specialists - experienced with RERAP, FARSITE, and GIS programs.
- Public Information Officer - familiar with language and concepts of wildland fire use.
- Division Supervisor - may implement holding actions identified in the WFIP.

If a wildland fire managed for resource benefits exceeds prescription parameters and cannot be brought back into prescription within 48 hours, it will be declared a wildfire. A Wildland Fire Situation Analysis will then be prepared and the appropriate suppression response taken.

All personnel assigned to any wildland fire will meet the qualification standards established by their home agency unless they are trainees operating under Task Books and with a fully qualified person for the training position.

A small pool of qualified FUMAs exists in the Greater Yellowstone Area. A list of qualified personnel is updated yearly in the Greater Yellowstone Area Interagency Fire Management Planning and Coordination Guide. Personnel listed in the guide should be available for Fire Use assignments under the jurisdiction of any of the agencies that are members of the GYA.

## Wildland Fire

A wildland fire will be managed for protection considerations whenever an ignition does not meet one or more of the prescription criteria in the initial Stage I decision process, the Stage II analysis and wildland fire implementation plan development, or exceeds prescription parameters during Stage III Management and the daily revalidation. An appropriate management response must be initiated immediately once a fire is no longer being managed as wildland fire use. The appropriate management response will likely differ between wilderness and non-wilderness areas. The appropriate management response will be based on least cost plus value lost that is consistent with Forest management goals and objectives. The following guidelines will help select the most appropriate management response:

- Suppression strategies must consider cost-effectiveness, preservation of both wilderness and non-wilderness values, protection of private property, and human life.
- Within wilderness, fire suppression will be accomplished utilizing methods and equipment that cause the least impact to the wilderness (Minimum Impact Management Tactics).
- Within wilderness, motorized equipment will only be used to the extent that it is necessary for the safe and most efficient fire suppression response possible. The Forest Supervisor or District Ranger delegated authority must approve the use of motorized equipment within the wilderness according to conditions established in FSM 2326.1. Where time constraints and fire situation allow, consider using the R4 Minimum Requirements Decision Guide to evaluate if specific actions are warranted.
- Within wilderness, aircraft will only be utilized in suppression and demobilization efforts when such use is necessary to meet other fire emergencies, for safety, and to reduce possible significant impacts to the wilderness resource. The Forest Supervisor, District Ranger delegated authority, or authorized Acting Line Officer must approve the use of air tankers and helicopters within wilderness.
- Heavy equipment use (tractors, dozers, graders etc.) will be minimized within the wilderness. Regional Forester approval is necessary for heavy equipment utilization within the wilderness.
- In non-wilderness areas, pre-plan dispatch guidelines and available resources will dictate the appropriate management response.

For wildland fires occurring within wilderness, impacts on wilderness values must be considered when deciding upon an appropriate management response. Suppression techniques that have the least impact on wilderness resources should be utilized. Initial attack crews will be briefed on appropriate wilderness suppression tactics and methods. Initial attack crews will be trained to properly select campsites, rehabilitate campsites, firelines, helispots, and the overall fire area from suppression action impacts.

A Resource Advisor knowledgeable in wilderness management and wilderness suppression methods should be assigned to any complex wildfire, or consulted with concerning smaller wildfires occurring within the wilderness. Wildland Fires that cross jurisdictional boundaries may have more than one resource advisor assigned to the incident.

Permit emergency burned area rehabilitation only if necessary to prevent an unnatural loss of the wilderness resource or to protect life, property, and other resource values outside of wilderness. Normally use hand tools and equipment to install selected land and channel treatments (FSM 2323.43b). Conduct all fire management activities within the wilderness in a manner compatible with overall wilderness management objectives. Give preference to using methods and equipment that cause the least:

- Alteration of the wilderness landscape
- Disturbance of the land surface

- Disturbance to visitor solitude
- Reduction of visibility during periods of visitor use
- Adverse effect on other air quality-related values (FSM 2324.23).

## MINIMUM IMPACT MANAGEMENT TACTICS

Minimum impact management tactics (formerly “Light Hand” or Minimum Impact Suppression Tactics) should be applied to all lands, not just wilderness. However, they are especially essential within wilderness areas to protect such wilderness values as naturalness and wildness. The tactics are organized by basic fire management activities—fireline construction, burning out and mop-up, and by specific types of actions such as tree cutting, hazard tree management, helicopter operations, and camp situations. A section on rehabilitation is also included.

One of the most basic tools in minimum impact management tactics is choosing the time of day in which to concentrate fire management efforts. Typically efforts should be concentrated at night or in the cooler parts of the day. Efforts in the heat of the day are often ineffective, especially in lighter fuels such as grass and sagebrush. Efforts at night or the cooler part of the day using much less impactful methods can be quite successful.

### Firelining

The basic intent of fireline is to halt additional fire spread. Fireline does not have to be constructed to meet this intent.

- Use aerial tactics (retardant or bucket drops) in light fuels, such as grass.
- Burn out from existing roads or trails, including animal trails.
- Use foam or water along the fire edge.
  - When using water, use spray or mist nozzle settings. Do not use straight stream settings.
  - Use 72-gallon blivits with lightweight hose long-lined in by helicopter in remote areas.
- Use all available natural barriers, such as rocky areas, bare streambeds, vegetation changes, and already cool fire perimeter.
- When hand fireline must be constructed, consider such measures as:
  - Locate the fireline in areas requiring a minimum of scraping and cutting.
  - Keep the width and depth to the minimum necessary to stop the fire’s spread.
  - Widen minimal firelines through burning out.
  - Limb or fall trees and snags only when necessary for safety or to prevent fire spread.
  - Minimize clearing of fuels next to the fire’s edge.
  - If possible, roll logs out of intended fireline instead of bucking. If not possible to roll, consider building fireline around the log and let it remain in the burned area if it will not pose a serious threat to fire escape.
  - When possible, scrape fuels from the base of snags or around heavy fuel concentrations to prevent fire spread and possible spotting.
  - Consider the use of fireline explosives to construct line and fell snags and trees.
- If machine fireline will be used, consider the following:
  - Have dozer operators avoid gouging the soil layer.
  - Use excavators instead of dozers, especially in deep duff.

### Burning Out

- Conduct burning out operations using the same considerations and methods as when conducting a prescribed fire. Complete consumption of all live or dead fuels is not necessary. Creating mosaic type burns can also serve to adequate slow or halt fire spread without creating high fire intensities or burn severities.
- Conduct burnouts during periods of lower fire intensity, such as at night or cooler portions of the day.

### Mop-up

Some mop-up may be necessary in order to fully contain the fire. However, it is often not necessary to mop-up every smoke. Evaluate the potential of any smoking area to actually threaten escape and further spread before mopping-up.

To lessen mop-up activities:

- Cold trail extensively.
- Try to avoid tool scars by using water or foam to extinguish the fire.
- Minimize spading. When spading, minimize soil disturbance.
- Do not use straight stream nozzle settings except during attempts to extinguish burning snags and trees.
- Roll logs to check for fire instead of bucking or excessive cutting. If rolling is not possible, let the log burn out if it is not a threat to additional fire spread.
- Cool, remove, or burn fuels that may ignite and cause fire spread.
- Allow fuels, snags, and trees to burn until out when they are well inside the fire perimeter and do not pose a serious threat to safety or fire spread.
- When falling appears necessary, consider alternative methods such as fireline.

### Tree Cutting

The basic questions to ask when considering cutting a tree down are: 1) does the tree or snag pose a risk of fire escape and continued spread and 2) if the tree or snag does not pose a risk, is it necessary that firefighters be working in its vicinity.

Consider the following alternatives to cutting:

#### Firelining

- Use minimum limbing (pruning) for trees with branches that extend to the ground.
- Avoid cutting any trees whose limbs are well above the surface fuel layer even when near a fireline.
- Gambel oak is not susceptible to fire spread up the bole; avoid cutting these trees even when near the fireline.
- Scrape around the base of trees or snags near the fireline to keep fire spread from igniting the base.
- Where burning out is planned, fall only those snags that would reach the fireline, should they burn and fall over.
- Avoid felling snags outside of the line in the intended burned out area only if they are an obvious safety hazard to crews working in the area.
- When necessary to cut trees or snags, follow up on rehabilitation to reduce the impact.

#### Mop-up

- Whenever possible, allow burning trees and snags to burn themselves out or down provided they do not pose a safety risk to crews that must work in the vicinity.
- Identify hazard trees with an observer, flagging, or glow-sticks.
- If burning trees or snags pose a serious threat of spreading firebrands, extinguish the fire with water or dirt. Consider falling by blasting, if available. Felling by chainsaw should be the last resort.

#### Hazard Trees

- Carefully evaluate any tree for true hazard to trails and roads after the fire. Many tree species can withstand partial consumption of the bole and remain solid on the stump for many years.
- Trees weakened by fire tend to fall over in the direction of the cat face. If the cat face points away from the road or trail allow it to fall over on its own.
- Trees that lean away from the road or trail should be allowed to fall over naturally.
- Evaluate the height of the tree or snag; will it even reach the road or trail? If not, allow it to stand.
- Trees and snags on the downhill side of the road or trail should be left unless they have a pronounced uphill lean.

#### Helicopter Operations

##### Planning/Proposed Phase

- What will be the primary function of this helispot (crew shuttle, logistic support, or both)?
- If for logistic support only, use long line remote hook instead of constructed helispots.
- If for crew shuttle, consider the minimum sized helicopter and opening for safe operations and still meet the intended management response.
- Use natural openings as far as practical. If construction is necessary, avoid high visitor use areas. Perform an aerial reconnaissance discussion over the area or fire perimeter where helispots are desired. With a Type II or I Incident Management Team involve, at minimum the Air Operations Manager, Resource Advisor, and Helitack Foreman who will be in charge of on-the-ground construction. With a Type III Incident Management Team involve, at minimum, the Resource Advisor and Helitack Foreman. Draw a sketch and discuss which trees to cut to ensure safe helicopter operations. Insure that all parties involved in the discussion have audio equipped helmets.
- As a group, discuss mitigating measures in order to restore the helispot to as natural a condition as possible or to blend the opening with the surrounding untouched natural landscape.
- If adverse environmental or wilderness impacts are anticipated from proposed helispots inside or within the fire area, are there other possibilities some distance away that would result in less impact and still accomplish the intended management objectives?
- Provide specific instructions, preferably written, for the on-the-ground supervisor and crew to use when constructing the helispot.
- If possible, monitor helispot construction.

##### Construction Phase

- Cut trees and snags close to the ground, leaving stump heights of 0-3 inches. Follow-up flush cutting may be necessary to reduce stumps to this height.
- If possible, directionally fell trees and snags such that the boles will be in a criss-crossed or in a natural appearing arrangement.
- Buck only what is necessary to create safe and practical operating space in and around the landing pad area.
- Limb only what is necessary to create safe and practical operating space; if possible break limbs instead of cutting them.

#### Base/Spike Camps and Personal Conduct

- If possible, use existing campsites.
- Camp at impact resistant sites such as rocky or sandy soils or openings within dense vegetation. Avoid camping in meadows or near stream banks and lakeshores.
- Avoid clearing vegetation, trenching around bedding sites, and cutting boughs for bedding.



- Change camp location if the area shows excessive use; use alternate travel routes to avoid excessive trail wear.
- Use stoves for cooking when possible and avoid construction of several campfire sites, especially fire pits and rock rings.
- Locate toilet sites a minimum of 200 feet from water sources.
- Keep latrine holes to less than 8 inches deep to speed decomposition of waste by soil bacteria.
- Evaluate coyote and spike camps versus daily travel to and from base camps, especially where sensitive areas are involved.

#### Rehabilitation

- Before starting rehabilitation activities, walk through adjacent untouched areas and observe the appearance, arrangement, and color scheme of the vegetation. Use these areas as a guide in directing rehabilitation efforts.
- Firelines and Mop-up Activity
- After fire spread is secured, replace dug-out soil and duff; obliterate berms and leave as natural appearing.
- Provide some means of drainage to prevent erosion on firelines or trails created on steeper slopes, such as shallow depth water bars or natural materials to act as sediment dams.
- Scatter some cut brush and limbs onto fireline or impacted areas so it blends more with the natural appearing landscape.
- Scatter obvious, excess accumulations of cut limbs, seedlings, and saplings into a more natural arrangement.
- Flush cut stumps of felled trees and snags with the ground surface; scatter cut portion out of sight.
- Camouflage cut stumps in a manner that blends with the surrounding landscape.
- Use a variety of methods to camouflage cut faces of stumps and boles instead of just one: rocks, dead woody material, dirt, fragments of stumps or bolewood, fallen or broken green branches, hack with pulaski or ax, etc.
- If needed, bring in some natural material from adjacent untouched areas to use in camouflaging cut faces of boles and stumps.
- Piece together cut sections of downed logs so they appear as un-cut, if possible. Place soil or some existing debris over the cuts.
- Position cut logs where they will be least noticeable to visitors.
- If bolewood can be moved, place cut end adjacent or underneath existing down material.
- For large size bolewood that cannot be moved, place a slant cut (45-60 degree angle) on the bottom side.
- Do not lop and scatter tops of cut trees.
- Selectively place a few of the cut seedlings and saplings in an upright position (wedged between downed logs, old root wads, etc.).
- If there has been an excessive amount of bucking, limbing, and topping; consider slinging or removing cut rounds and tops from the site.
- Consider using explosives on some stumps and cut faces of bolewood to create the appearance of a wind-thrown tree.
- Remove all flagging and trash along the fireline.

#### Helispots

- If excessive amounts of cut material exist, pile and arrange for it to be burned at a later date or consider slinging cut material from the site.
- Obliterate the landing pad and leave in as natural a condition as possible. Bury painted helispot markers, if they exist.

#### Camps

- Scatter campfire site rocks and charcoal; cover charred fire ring rocks with soil if necessary.
- Scatter any cut limbs or splittings that may have occurred.
- Cover latrine site.
- Remove camp or tent poles and stakes made from trees and scatter in a nearby tree-covered area.
- Pick up litter and pack out all garbage.

### **Wildland Fire Situation Analysis (WFSA)**

The Wildland Fire Situation Analysis (WFSA) is a decision making process in which the agency administrator or representative describes the situation, establishes objectives and constraints, compares multiple strategic wildland fire management alternatives, evaluates the expected effects of the alternatives, selects the preferred alternative, and documents the decision.

Use of the WFSA is integral to successful management of both wildland and prescribed fires. It serves as a contingency when fire spread and behavior exceed suppression efforts, when there is an inability to accomplish wildland fire use objectives, or when prescribed fires can no longer be implemented in accordance with the approved plan. The WFSA document can be used to compare alternatives reflecting the full range of appropriate management responses and can assess alternatives for realizing protection and/or resource benefits opportunities.

If a prescribed fire or wildland fire use event is converted to a suppression-oriented response, a WFSA will be developed. After this decision is made, the fire will never revert back to the original status. A WFSA will also be prepared for all suppression fires that escape initial attack. The WFSA may be prepared using WFSA software. This software guides the user step by step through a Wildland Fire Situation Analysis (WFSA) and/or a Wildland Fire Implementation Plan (WFIP). The program automatically retrieves stored data and makes all the necessary calculations to help prepare and display the significant tradeoffs between alternatives. The Wildland Fire Situation Analysis is compatible with the NWCG accepted format. The Wildland Fire Use assessments and plans are compatible with USDA Forest Service and DOI agency wildland fire use standards.

## Interagency and Intraagency Coordination

The Greater Yellowstone Coordinating Committee developed the Greater Yellowstone Area Interagency Fire Management Planning and Coordinating Guide (June 1990) to strengthen fire management planning and to develop specific operating principles and procedures to provide effective interagency coordination and management of prescribed natural fires and wildfires occurring in the Greater Yellowstone Area. The Coordination Guide was revised in 1995 and more recently in March 2000. The purpose of this document is to address fire management issues and operational procedures which in the view of the GYCC, must be addressed and implemented on an area-wide basis in a consistent manner. The GYA Coordination Guide is included in its entirety in Appendix D

Operational procedures that will encourage a high level of interagency fire management planning and coordination in the GYA include:

- To conduct an annual spring and fall meeting of all GYA FMO's.
- Maintaining the interagency peer review process for new and revised NPS fire management plans and that portion of USFS land use plans that focus on wildland fire use.
- Operate and apply the GYA Fire Situation Report.
- Adhere to the GYA Preparedness Plan
- Utilize the GYCC Fire Management Advisory Group (FMAG) to serve as professional level consultants to the GYCC/
- Maintain a consistent process for the management of prescribed fires and wildland fires in the GYA as described in the *Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide*.

On March 6, 1992 an Interagency Fire Management Agreement was entered into by the six national forests and two national parks that comprise the GYA. The purpose for this agreement was to establish specific operating procedures for the coordinated management of various fire activities, which are planned, or have potential to cross the administrative boundaries of individual GYA units. These activities include, but are not limited to:

- Allowing WFUs to cross administrative boundaries.
- Joint management of wildland fires, which have the potential or have already crossed administrative boundaries.
- Execution of prescribed fires which will cross administrative boundaries.
- Joint training and fire prevention efforts.

Other interagency coordination should occur when program changes, drought conditions, or other factors warrant such coordination. Coordination may occur through interagency meetings, memos, news

releases, or public meetings. The following governmental agencies or entities should be consulted during preseason planning when coordination is necessary:

**Other Federal Agencies**

- USDI Bureau of Land Management
- USDI Bureau of Indian Affairs
- USDI Fish and Wildlife Service
- USFS (Bridger-Teton NF, Beaverhead-Deerlodge, and Gallatin NF)
- National Park Service (Grand Teton NP and Yellowstone NP)
- USDA Sheep Experiment Station
- USDI Red Rock Wildlife Refuge

**States of Wyoming and Idaho**

- Wyoming Game and Fish
- Idaho Dept. of State Lands
- Wyoming Dept. of Environmental Quality

Local Governments

- City Governments
- County Board of Commissioners
- City/County Health Departments
- City/Rural/Volunteer Fire Departments

The following agencies may be informed of ongoing fire status in the event of a WFU event within the plan area. Coordination and information-sharing intensity and effort will be based on the overall fire situation complexity. The WFU Analysis Team or Incident Management Team must decide on who should be contacted and what appropriate media is most efficient.

**Other Federal Agencies**

- USFS (Bridger Teton and Gallatin NF)
- National Park Service (Grand Teton and Yellowstone NP)
- USDI Bureau of Land Management
- USDI Bureau of Indian Affairs
- USDI Fish and Wildlife Service

States of Wyoming and Idaho

- Wyoming Game and Fish
- Idaho Dept. of State Lands
- Wyoming Dept. of Environmental Quality

**Local Governments**

- City Governments
- County Board of Commissioners
- City/County Health Departments
- County Sheriffs
- City/Rural/Volunteer Fire Departments

Coordination must also occur at the local level among the units managing the included FMUs. Decisions made by one District could affect the potential decisions made by the adjacent District. Good communications should be maintained to facilitate information exchange concerning WFU within the subsection. Timely information exchange aids in the Stage I and Stage II decision process, this information assists the analysis team and/or decision maker to evaluate the cumulative effects of the decision on adjacent communities, Forest users, and fire suppression resources.

**Wildland Fire Use Contact List**

**Supervisor's Office:** 1405 Hollipark Dr. Idaho Falls, ID 83401 (208) 524-7500

Forest Supervisor  
Fire Management Officer  
Forest Fuels  
Fire Use/Prev/Mitigation

Jerry Reese  
Chris Ourada  
John Kidd  
Kraig Carroll

C-TNF/NPF Fire/Fuels Planner  
Fire Ecologist  
Recreation/Operations  
Public Affairs Officer  
Public Affairs/Fire Information

Gina Martin  
Vicky Edwards  
Lisa Klinger  
Lynn Ballard  
Joanna Wilson

**Ashton / Island Park Ranger District:** PO Box 858 Ashton, ID 83420 (208) 652-7442;  
HC 65 Box 975 Island Park; ID 83429 (208) 558-7301

District Ranger  
North Zone Fire Management Officer  
Wilderness Program Manager

Adrienne Keller  
Skip Hurt (shared)  
Megan Bogle

**Dubois Ranger Station:** PO Box 46 Dubois, ID 83423 (208) 374-5422

District Ranger  
North Zone Fire Management Officer

Robert Mickelsen  
Skip Hurt (shared)

**Palisades Ranger District:** 3659 E. Ririe Highway Idaho Falls, ID 83401 (208) 542-5800

District Ranger  
Fire Management Officer  
Asst. Fire Management Officer

Ronald Dickemore  
Larry Zajanc (shared)  
Spencer Johnston (shared)

**Teton Basin Ranger District:** PO Box 777 Driggs, ID 83422 (208) 354-2312

District Ranger  
Zone Fire Management Officer  
Zone Asst. Fire Management Officer  
Wilderness Program Manager

Jay Pence  
Larry Zajanc (shared)  
Spencer Johnston (shared)  
Megan Bogle

**Montpelier Ranger District:** 322 N. 4<sup>th</sup> Montpelier, ID 83254 (208) 847-0375

District Ranger  
Zone Fire Management Officer  
Zone Fire Management Officer

Dennis Duehren  
Garth Alleman (shared)  
Jared Mattson

**Soda Springs Ranger District:** 421 W. Second S. Soda Springs, ID 83276 (208) 547-4356

District Ranger  
Zone Fire Management Officer  
Zone Assist. Fire Management Officer

Dave Whittekiend  
Garth Alleman (shared)  
Jared Mattson

**Westside Ranger District:** 75 S. 140 E. Malad, ID 83252 (208) 766-4743;  
415 S. Arthur Pocatello, Idaho 83204 (208) 236-7500

District Ranger  
Zone Fire Management Officer  
Asst. Fire Management Officer

Jerald Tower  
Greg Burch (shared)  
Vacant

*Off Forest Contacts*

<b>Bridger Teton National Park</b> Forest FMO	Rod Dykehouse	(307)739-5576
<b>Gallatin National Forest</b> Forest FMO	Vacant	(406) 587-6717
<b>Grand Teton National Park</b> Fire Management Officer	Lisa Elenz	(307) 739-3310
<b>Yellowstone National Park</b> Fire Management Officer	Phil Perkins	(406) 344-2180
<b>Bureau of Land Management</b> Fire Management Officer	Rick Belger	(208) 524-7601
<b>Teton Interagency Dispatch Center</b>		(307) 739-3630
<b>Bozeman Interagency Dispatch Center</b>		(406) 587-6719
<b>Yellowstone Dispatch Center</b>		(307) 344-2181
<b>Dillon Dispatch</b>		(406) 683-3975
<b>Beaverhead-Deerlodge National Forest</b> Forest FMO	Tammy Clark	(406) 683-3990
<b>Beaverhead-Deerlodge National Forest</b> Dillion FMO	George Johnson	(406) 683-3969
<b>Beaverhead-Deerlodge National Forest</b> Dillion District Ranger	Tom Osen	(406) 683-3988
<b>Red Rock Wildlife Refuge</b> Refuge Manager	Mike Parker	(406) 276-3536
<b>USDA Sheep Experiment Station</b>	Greg Lewis	(208) 374-5306
<b>Salmon-Challis National Forest</b> Forest FMO	Vacant	(208) 756-5158
<b>Salmon-Challis National Forest</b> Leadore District Ranger	Dennis Hillard	(208) 768-2500
<b>Salmon-Challis National Forest</b> Lost River District Ranger	Carol Eckert-Benkosky	(208) 588-3402
<b>Dillion Field Office (BLM)</b> Field Manager	Tim Bozorth	(406) 683-2337
<b>Butte Field Office (BLM) FMO</b>	John Thompson	(406) 533-7611
<b>Beaverhead-Deerlodge National Forest</b> Madison District Ranger	Mark Petroni	(406) 682-4253
<b>Beaverhead-Deerlodge National Forest</b> Madison Ranger District FMO	Al Kyle	(406) 682-4253

**Idaho Department of Lands**

Area Manager

Bob Bramer

(208) 525-7167

**Gallatin National Forest**

Hebgen Lake District Ranger

Bill Queen

(406) 646-7369

**Gallatin National Forest**

Hebgen Lake District West Zone FMO

Fred Jones

(406) 522-2545

**Gallatin National Forest**

Hebgen Lake District AFMO

Anna Anderson

(406) 646-7369



## Inform and Involve Plan

The Wildland Fire Use Inform and Involve program is crucial to gain the support and understanding necessary to re-establish and implement a successful program. The following categories will guide Wildland Fire Use information dissemination and coordination pertaining to Wildland Fire Use on the Caribou-Targhee NF.

**Pre-Fire Season Information and Involvement-** These activities prepare the subsection complex for the upcoming fire season. Strategies to emphasize public awareness and education also occur here.

**Fire Use Management-** A specific Inform and Involve Plan is developed for each WFU. This category of action involves current activity.

**Post-Season Activities-** Information gathering and evaluation of the Wildland Fire Use Program. Activities consist of analyzing individual fire monitoring plans and programmatic monitoring data. Program results and interpretations should be disseminated to interested parties, other agencies, and within agency.

### 1.Pre-fire season Information and Involvement

TASK	TOOLS	RESPONSIBILITY	TIMING
Dry run of WFU ignition evaluation and decision scenario	Meeting	Forest Supervisor and District Rangers	Annually by May
Develop list of qualified individuals for positions to implement the Wildland Fire Use Program	GYA FMO meeting	Wilderness and Fire Managers	Annually by May
Present general wilderness/fire management information to employees	Brochures, videos, and meetings	District Rangers, Wilderness and Fire Staff	Annually by June
Integrate wilderness fire management into annual wilderness and fire mgmt. training.	Meetings	Fire Management	Annually by June
Provide information to outfitters, permittees, general Forest users, and the public that may be affected by wildland fire use	Meetings, brochures, and videos	District Rangers	As needed

TASK	TOOLS	RESPONSIBILITY	TIMING
Integrate Wildland Fire Management into Forest education programs at local schools	Classroom presentations	District Rangers	As needed
Prepare news releases on Wildland Fire Use in the Forest	News Releases	District Rangers and PIO	Pre-fire season and also during and post-fire season
Post Wildland Fire Use info at the trailheads and access points	Posters and signs	District Ranger	Annually by June

## 2. Fire Use Management

TASK	TOOLS	RESPONSIBILITY	TIMING
Keep appropriate Line Officer apprised of current and expected fire behavior and fire status	Meetings, phone calls, and briefings associated with analysis and management of WFU	Fire Use Manager (FUMA) Analysis Team	On-going during ignition, fire duration, and when significant changes occur
Make news media aware of Wildland Fire situation	Radio, Television and papers	Forest Supervisor, District Ranger, FUMA, and PIO	On-going during ignition, fire duration, and when significant changes occur
Post "Fire Caution" signs and information at trailheads and access points	Signs and posters	FUMA and District Ranger	Duration of Wildland Fire
Determine conditions that would dictate a fire closure. Coordinate with adjacent units and agencies	Meetings, phone calls, and field recons	Forest Supervisor, Forest FMO, FBA, and FUMA	Determined by current and expected conditions
Post fire closure signs at trailheads and access points. Contact permittees, general forest users, and other agencies	Signs, posters, phone calls and meetings	Forest Supervisor, District Ranger, PIO, and FUMA	When closure is put into effect

TASK	TOOLS	RESPONSIBILITY	TIMING
Keep National, Regional, and Local political contacts apprised of Wildland Fire status	Phone calls, meetings, briefing papers, and news releases	Regional Office, Forest Supervisor, District Ranger, PIO and FUMA	Based on National, Regional, and Local fire situation
Keep wilderness rangers, field personnel, and frontliners apprised of fire status	Phone calls and meetings	Forest Supervisor and District Ranger	Duration of Wildland Fire

**3. Post-Season Activities**

TASK	TOOLS	RESPONSIBILITY	TIMING
Review information and education efforts involving Wildland Fire Use	Meetings	Forest Supervisor, Forest FMO, and District Rangers	Within three months of fire season ending
Evaluate and interpret post-fire monitoring and programmatic monitoring efforts and results	Meetings	Forest Supervisor, Forest FMO, and District Rangers	Within three months of fire season ending
Review C-T Fire Use Guidebook and Forest FMAP to ascertain how they were implemented and how they operated during the past fire season	Evaluation and Recommendation Report	Forest Supervisor	By the end of the calendar year
Contact general Forest users, permittees, and the public concerning this past seasons fire activity	Meetings, phone calls and news releases	District Rangers and PIO	By the end of the calendar year
Report motorized use and mechanized transport with wilderness to Forest Wilderness Program Manager	Phone calls, E-Mail	Dispatch	By the end of the calendar year

## MONITORING, EVALUATION, and DOCUMENTATION

### *IMPLEMENTATION MONITORING*

Monitoring and evaluation are important at several phases of the Wildland Fire Use (WFU) program. These phases are 1:Implementation (during the fire) 2:Effectiveness (within 6 months) and 3:Validation.

Any ongoing WFU will be monitored. Fire size, chronology, management actions (e.g. flights, holding actions, closures) and expenditures are all categories of information that must be tracked. The primary monitoring will be recorded in the Wildland Fire Implementation Plan (WFIP) and the Periodic Fire Assessment form. This information will be used for local/regional data base development and will be completed during the fire by the Fire Use Manager (FUMA). If multiple fires occur it is important to document each fire separately with such items as visibility impairments, days of trail closures, etc. All wildland fire use events will require either a complete or abbreviated ICS-209. An abbreviated ICS-209 is defined as Blocks 2 through 7, 9 through 11, 14, 15, and 44 through 47. Once a WFU reaches 100 acres in size in timber, or 300 acres in grass fuel types a complete ICS-209 will be required (Great Basin Mob Guide).

### *EFFECTIVENESS MONITORING*

The wildland fire use observation record form (located in Stage III) should be initiated. This form identifies items that need to be captured for all fires Class B or larger and in some cases the evaluation may be helpful for Class A fires. This would indicate if there were problems with the process or if special circumstances related to ecological or social concerns are present (e.g. T&E species or concentrated public use).

The information for the WFU records would be collected on the Forest within six months of the fire. The FUMA and Resource Advisor at a minimum need to be involved. For fires of 100 acres and larger an on-site interdisciplinary review will be conducted. This review will collect the following information:

- Fire Intensity Mapping (with Photo corroboration)
  - Fire Area (acres)
  - % Crown Fire (acres)
  - % lethal underburn (acres)
  - % non-lethal underburn (acres)
  - % un-burned area within fire perimeter (acres)
  - indicate vegetation or habitat type and fuel model

- Fuel Consumption: give a narrative description of what is left or an estimate of percent consumed. This may help with estimate of smoke emissions and risk reduction. It is also important ecologically as it relates to moisture retention, organic material available for soil building, cover, and erosion.
  
- Extended Damage:
  - Trail system damage as a result of fire. (e.g. loss of trail structures, miles of trail clearing, etc.). Give number of years to restore trail and complete hazard reductions.
  - Other structures (e.g. signs, cabins).
  - Weed infestations within the burned area.
  
- Look at management actions that have the potential to impact the area characteristics such as use of aircraft, pumps, chainsaws, locations of helispots, spikecamps, and fire control lines. Determine if such actions impacted the area characteristics and if so what alternative course of action may be used in the future to reduce the effects of such use.
  
- Assess what opportunities were available for additional monitoring or research concerning fire effects on wildlife, soils, water and biodiversity. Were appropriate individuals and/or groups made aware of these opportunities? What was done to facilitate the initiation implementation of additional fire effects monitoring and research?
  
- A cost analysis should be accomplished for fires over 100 acres in size to determine the cost effectiveness of allowing these fires to burn. The cost comparison should be made using the WFSA cost analysis versus the actual cost of the WFU project.
  
- Post-fire evaluations should be implemented at the District office in collaboration with the Supervisors office.

#### **VALIDATION MONITORING**

The primary objective of the WFU program in these subsections is to permit lightning caused fires to play, as nearly as possible, their natural ecological role. This objective cannot be measured in a quantitative way, but can be gauged in a relative sense.

A WFU in any subsection is only a part of a bigger picture; for this reason validation monitoring needs to take place. This overview by regional and forest staff will answer questions relating to broad scale reintroduction of fire into the landscape. This will be completed within six months of the fire.

Information in the fire records will include:

- Total number of starts in the subsection.
- % of fires in WFU status.
- % of fires in Confine, Contain status.
- Acres included in each of the previous categories.
- Agency acceptance.
- Days of restrictions of programs because of smoke, safety concerns, political reasons.
- Decision analysis, including all starts.
- Tracking of off-site smoke problems.

An important aspect of monitoring is to track the number of starts that are suppressed and the number and size of management ignited fires used to reduce fuel loadings in order to return fire to its natural role in the ecosystem.

Analyze the suppression responses that were utilized in response to wildfires and/or WFU to determine impacts on area resources. Different suppression responses have varying effects on resource values.

Analyze the decision process for all fire to evaluate the rationale as to why some fires are managed as WFU and some are not. Analyze suppression responses to all fires to ascertain whether the chosen strategy was appropriate considering resource values, smoke concerns, public and personnel safety, and threats to administrative facilities and private property.

Determine through history and experience whether adjustments in procedures or guidelines need to be implemented to streamline or improve the effectiveness of the Wildland Fire Use Program.

Evaluate yearly what effect the WFU program has on fire personnel, public, and resource user safety.

Analyze public information requirements during a WFU and ascertain whether opportunities increased for the public and permittees to observe and interpret fires natural role in the ecosystem?

## GENERAL FUNDING REQUIREMENTS

The initial sighting of all fires within this fire management area will be financed with appropriated fire funds, the same as any other reported or detected ignition. A determination must be made after detection whether the ignition will be a wildland fire use (WFU) or a wildfire

When it is determined that the fire will be managed as wildland fire use, dispatch will assign the fire a "G" code following established procedures on assigning fire numbers.

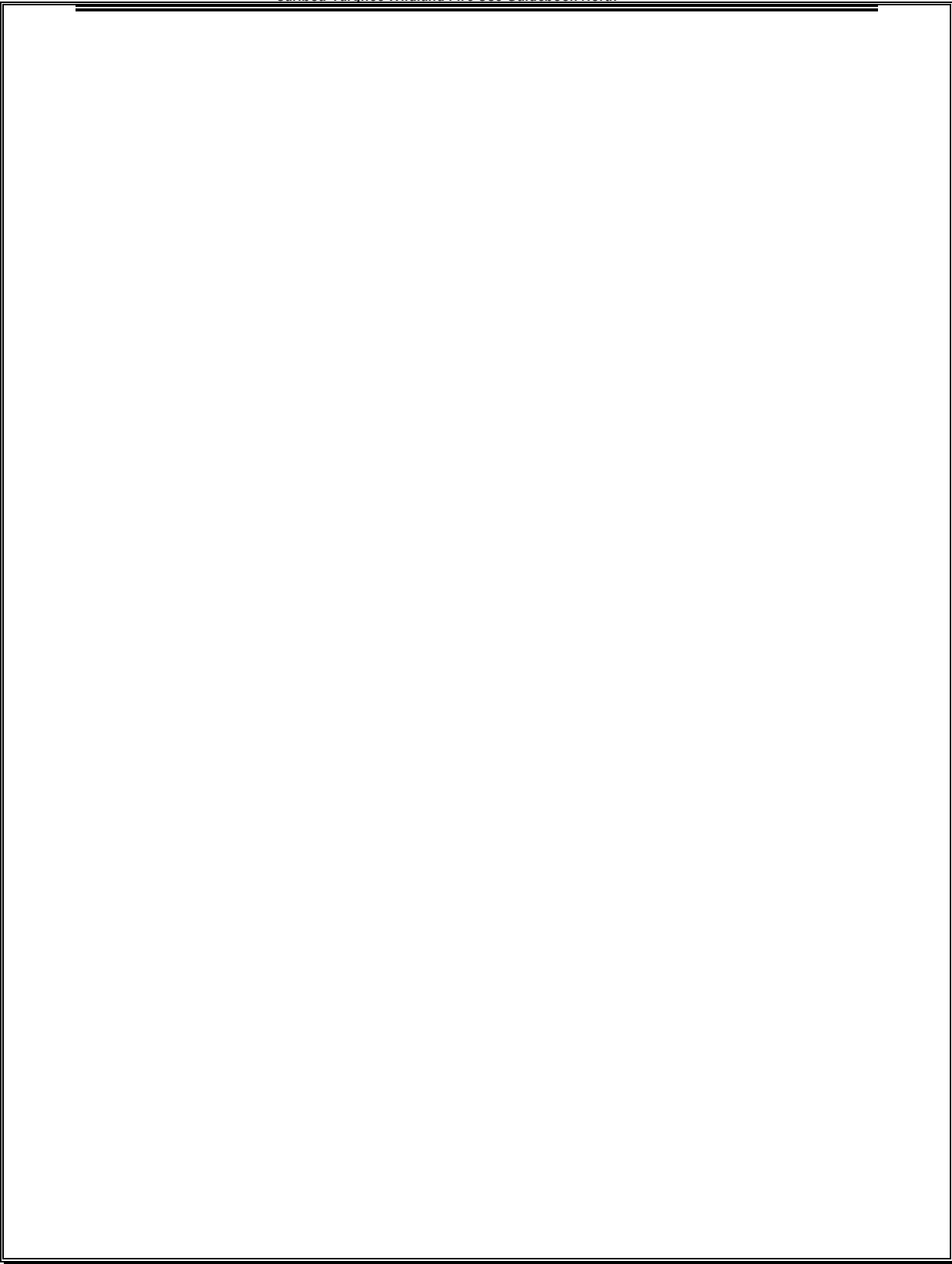
All personnel involved with the management of the WFU will charge to the "G" code using the same rules as for "P" codes. Those individuals that are funded from appropriated fire funds (Program Leadership and Production) will charge their base 8 time and all overtime and hazard pay to the "G" code. Those individuals that are not funded by appropriated fire dollars (including fuels funded persons) will charge all time associated with WFU management to the "G" code. If personnel are needed for the management of the WFU that are not located on the Forest, the normal dispatch ordering channels will be used to fire order those necessary positions.

Managing a WFU that is either inactive, small in size, or has a low probability of developing into a large fire, may only require occasional surveillance. It's anticipated these fires can most efficiently be observed during routine wildfire detection flights. Managing a WFU having more active fire behavior (minor surface spread, some individual tree torching) may also be observed during routine wildfire detection reconnaissance. A proportionate amount of the total detection cost may be funded from the WFU fire number ("G" code), depending on the time involved and on a case-by-case basis.

If a special flight is deemed necessary or on-site observations are required (as could be expected for large and/or very active fires), the entire cost would be charged to the "G" code.

Any specialized equipment costs for managing the WFU (i.e. helicopters, IR flights, film development, etc.) will be charged to the assigned "G" code.

When prescriptive criteria are exceeded and the fire cannot be brought back into prescription, the fire will then be managed for protection considerations and appropriate suppression action will be taken. Dispatch will then change the fire number from a "G" code to a "P" code. All activities, equipment, tools, and extra personnel needed to perform the appropriate suppression response will be financed as any wildfire suppression by emergency fire suppression funds utilizing this "P" code. This coding structure enables all costs associated with a particular ignition to be tracked at all levels.





## Appendix A

### 101 - Lemhi-Medicine Lodge Fans - Shrub Steppe

#### Summary

The Lemhi mountains and Medicine Lodge area are a result of uplifting and normal faulting forming high relief mountain ranges that run roughly north and south. Alluvial deposits form alluvial fans and associated landforms at the foot of these mountains. This LTA exists on these alluvial deposits. (fig. 13)

#### Setting

Subsection: Lemhi-Medicine Lodge M332Ek

Landform: fan remnants and foothills

Elevation: 5500 to 8000 feet

Slope: 4 to 35 percent

Relief: 100 to 200 feet.

Drainage: The landscape is lightly dissected by shallow draws and incised drainageways.

Ephemeral streams that flow onto fans are the major stream types.

Precipitation: 11 to 16 inches (Most precipitation occurs in the autumn, winter and spring with 70 percent falling as snow.)

Average annual air temperature: 36 to 38 degrees F

Geology: alluvium and igneous rocks

#### Vegetation

Dominant Potential Natural Communities

- mountain big sagebrush/Idaho fescue p.a.
- black sagebrush/bluebunch wheatgrass p.a.

#### Soils

Parent material: alluvium derived from limestone or colluvium derived from igneous rocks and loess

The primary soils are very deep (greater than 60 inches) and well drained. The surface layers consist of moderately coarse-textured or medium-textured soil materials with few to many rock fragments. The subsoils consist of moderately coarse-textured to moderately fine-textured soil materials with few to abundant rock fragments. The substratums begin at a depth greater than 60 inches.

These soils classify as fine-loamy, mixed superactive Argic Cryoborolls (Monida series); loamy-skeletal, carbonatic Calcic Cryoborolls (Zeale series); loamy-skeletal, carbonatic, frigid

Xeric Haplocalcids (Simeroi series) and loamy-skeletal, mixed, superactive Typic Cryoborolls.

#### Related LTA Units

- Unit 102 is on foothills and mountains in the forested and alpine zones.

#### Comments

The majority of this delineation consists of Ecological Units 1125, 1128 and 1313. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 102 - Lemhi-Medicine Lodge Mountains – Conifer Forest

### Summary

The Lemhi mountains and Medicine Lodge area are a result of uplifting and normal faulting forming high relief mountain ranges that run roughly north and south. These mountains have been dissected by parallel drainages that drain onto the alluvial fans below. This LTA exists on these high relief mountains. (fig. 14)

### Setting

Subsection: Lemhi-Medicine Lodge M332Ek  
Landform: foothills, mountains and moraines

Elevation: 5800 to 12,200 feet

Slope: 4 to 70 percent

Relief: 500 feet or more

Drainage: The landscape is dissected by deeply incised drainages. Parallel drainage patterns are commonly represented. Ephemeral streams that flow onto fans are the major stream types.

Precipitation: 11 to 30 inches (Most precipitation occurs in the autumn, winter and spring with 70 percent falling as snow.)

Average annual air temperature: 35 to 39 degrees F

Geology: sedimentary rocks

### Vegetation

Dominant Potential Natural Communities

- limber pine/spike fescue p.a.
- Douglas-fir/common juniper p.a.
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.
- Douglas-fir/Idaho fescue p.a.
- mountain big sagebrush/Idaho fescue p.a.
- low alpine forb communities
- alpine grass and sedge communities

### Soils

Parent material: colluvium and local alluvium derived from limestone or quartzite and loess

The primary soils are very deep (greater than 60 inches) and well or somewhat excessively drained. Soils supporting forested communities have a thin (about 1 inch thick) forest litter layer on the surface. The surface layers consist of moderately coarse-textured or medium-textured soil materials with few to many rock fragments. The subsoils consist of moderately coarse-

textured to moderately fine-textured soil materials with few to abundant rock fragments. The substratums on quartzite parent materials begin at a depth of 10 to 20 inches and consist of coarse-textured soil material with abundant rock fragments. The substratums on limestone parent materials begin at a depth greater than 60 inches.

These soils classify as loamy-skeletal, carbonatic Calcic Cryoborolls (Fritz series); loamy-skeletal, mixed, superactive Calcic Cryoborolls (Gany series); loamy-skeletal, carbonatic Calcic Pachic Cryoborolls (Meegero series); fine-loamy, mixed, superactive Argic Cryoborolls (Monida series); sandy-skeletal, mixed Typic Cryochrepts (Pikaden series) and Cryochrepts, loamy-skeletal subgroup.

### Related LTA Units

- Unit 101 is on fan remnants and foothills in the shrub steppe zone.

### Comments

The majority of this delineation consists of Ecological Units 1129, 1130, 1133, 1154 and 1280. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 201 - Beaverhead and Centennial Mountains Shrub Steppe

### Summary

The Beaverhead and Centennial Mountains are fault block mountain ranges running east and west along the continental divide. This LTA exists in both of these ranges and in the Henrys Lake Mountains. The geology of this area consists of a quartzite conglomerate material called the divide formation that has been overlaid by alluvium from quartzite conglomerate. (fig. 15)

### Setting

Subsection: Centennial Mountains M332Ea

Landform: foothills, fan remnants and alluvial fans

Elevation: 5900 to 9000 feet.

Slope: 4 to 50 percent.

Relief: 100 to 400 feet.

Drainage: The landscape is highly dissected by a dendritic drainage pattern. Small intermittent streams are common in some of the larger draws.

Precipitation: 17 to 24 inches (Most of the precipitation occurs in the autumn, winter and spring with 70 percent falling as snow.)

Average annual air temperature: 36 to 39 degrees F

Geology: mixed

### Vegetation

Dominant Potential Natural Communities

- mountain big sagebrush/Idaho fescue p.a.
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.

### Soils

Parent material: local alluvium or colluvium derived from mixed rocks and loess

The primary soils are very deep (greater than 60 inches) and well drained. The surface layers consist of medium-textured soil material with few to many rock fragments. The subsoils and substratums consist of moderately coarse-textured to moderately fine-textured soil materials with few to abundant rock fragments. The substratums begin at a depth of 30 or more inches.

These soils classify as loamy-skeletal, mixed, superactive Argic Cryoborolls (Zeebar and Fourme series); fine-loamy, mixed, superactive Argic Cryoborolls (Monida series); loamy-skeletal, mixed, superactive Pachic Cryoborolls (Povey series).

### Related LTA Units

- Unit 202 is at mid elevations in the forested zone.
- Unit 203 is at high elevations in the forested zone.

### Comments

The majority of this delineation consists of Ecological Units 1145, 1146, 1147, 1250 and 1760. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 202 - Beaverhead and Centennial Mountains -Conifer Forest

### Summary

The Beaverhead and Centennial Mountains are fault block mountain ranges running east and west along the continental divide. This LTA exists in both of these ranges and in the Henrys Lake Mountains. The geology of this area consists of soft sedimentary materials overlaid by a thin veneer of loess. (fig. 16)

### Setting

Subsection: Centennial Mountains M332Ea

Landform: foothills and mountains

Elevation: 6000 to 9700 feet

Slope: 4 to 70

Relief: 100 to 3000 feet

Drainage: Most of the landscape is highly dissected by a complex drainage pattern.

Small intermittent and some perennial streams occur in draws and basins. Springs and seeps are common in this unit.

Precipitation: 22 to 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 33 to 38 degrees F

Geology: mixed

### Vegetation

Dominant Potential Natural Communities

- Douglas-fir/pinegrass p.a., pinegrass phase
- subalpine fir/pinegrass p.a., pinegrass phase
- subalpine fir/white spirea p.a.
- subalpine fir/western meadowrue p.a.
- subalpine fir/Rocky Mountain maple p.a.
- Douglas-fir/Oregongrape p.a., whortleleaf snowberry phase

### Soils

Parent material: local alluvium or colluvium derived from mixed rocks, loess and volcanic ash

The primary soils are very deep (greater than 60 inches) and moderately well or well drained.

Soils supporting forested communities have a thin (about one inch) forest litter layer on the surface. The surface and subsurface layers consist of medium-textured soil material with few to many rock fragments. The diverse subsoils and substratums consist of moderately coarse-textured to fine-textured soil materials with few

to abundant rock fragments. The substratums begin at a depth of 40 or more inches.

These soils classify as loamy-skeletal, mixed, superactive Vitrandic Cryoborolls (Edgway series); loamy-skeletal, mixed, active Vitrandic Paleboralfs (Fitzwil series); loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts (Rhylow series); loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series); fine, smectitic Vertic Cryoborolls (Nearl series); loamy-skeletal, mixed, superactive Calcic Cryoborolls (Gany series); loamy-skeletal, carbonatic Calcic Pachic Cryoborolls (Katpa series) and loamy-skeletal, carbonatic Calcic Cryoborolls (Fritz series).

### Related LTA Units

- Unit 201 is on foothills, fan remnants and alluvial fans in the shrub steppe zone.
- Unit 203 is at high elevations and borders the alpine zone.

### Comments

The majority of this delineation consists of Ecological Units 1140, 1149, 1150, 1172, 1315 and 1597. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 203 - Centennial Mountains and Henrys Lake Mountains - Conifer Forest

### Summary

The Centennial and Henrys Lake Mountains are fault block mountain ranges running east and west along the continental divide. This LTA exists dominantly in the Centennial and Henrys Lake Mountains at the highest elevations. (fig. 17)

### Setting

Subsection: Centennial Mountains M332Ea

Landform: plateaus and mountains

Elevation: 7100 to 10,000 feet

Slope: 4 to 70 percent

Relief: 100 to 2000 feet

Drainage: The landscape is moderately dissected by a parallel drainage pattern. Small intermittent and some perennial streams occur in larger drainages.

Precipitation: 28 to 45 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 30 to 34 degrees F

Geology: mixed

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/western meadowrue p.a.
- a mosaic of: subalpine fir/gooseberry currant p.a., whitebark pine phase; tall forb communities
- a mosaic of: subalpine fir/gooseberry currant p.a., whitebark pine phase; spiked big sagebrush/elk sedge p.a.
- an ecotone of: whitebark pine/Idaho fescue p.a.; mountain big sagebrush/Idaho fescue p.a.
- subalpine fir/blue huckleberry p.a., myrtle pachistima phase

### Soils

Parent material: local alluvium or colluvium derived from mixed rocks, loess and volcanic ash

The primary soils are moderately deep to very deep (20 to greater than 60 inches) over hard bedrock. Soils supporting forested communities have a thin (about one inch) forest litter layer on the surface. The surface and subsurface layers

consist of medium-textured or moderately fine-textured soil materials with few to many rock fragments. The subsoils and substratums consist of moderately coarse-textured to fine-textured soil materials with few to abundant rock fragments.

These soils classify as fine-loamy, mixed, active Abruptic Paleboralfs (Yodal series); fine, smectitic Vertic Cryoborolls (Nearl series); loamy-skeletal, mixed, active Vitrandic Paleboralfs (Fitzwil series); loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts and loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series).

### Related LTA Units

- Unit 201 is on foothills, fan remnants and alluvial fans in the shrub steppe zone.
- Unit 202 is at mid elevations in the forested zone.

### Comments

The majority of this delineation consists of Ecological Units 1140, 1170, 1175, 1270, 1316 and 1576. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 301 - Island Park Plains and Falls River Tablelands -Conifer Forest

### Summary

The Island Park Caldera was formed by the collapse of a larger rhyolite shield volcano. Following the collapse, volcanic activity continued resulting in basalt flows covering much of the caldera floor. The basalt flows have formed a relatively flat surface with pressure ridges 10 to 20 feet in relief. The entire area has been overlaid with wind blown silts varying in thickness from a few inches to greater than 70 inches. The Falls River Tablelands area consists of wind blown silts over dissected volcanic tablelands. (fig.18)

### Setting

Subsection: Island Park M331Aa  
Landform: caldera floor, plains and dissected tablelands

Elevation: 5300 to 7300 feet

Slope: 0 to 35 percent

Relief: 10 to 100 feet

Drainage: The landscape of the Island Park Caldera is slightly dissected by a complex drainage pattern. The Henry's Fork of the Snake River flows through and drains this unit. Tributaries to the Henry's Fork are spring fed. The Falls River area is slightly to moderately dissected by both dendritic and parallel drainage patterns. Perennial streams occur in the larger drainages

Precipitation: 24 to 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 36 to 38 degrees F

Geology: igneous rocks

### Vegetation

Dominant Potential Natural Communities

- an ecotone of: lodgepole pine/antelope bitterbrush p.a.; mountain big sagebrush/Idaho fescue p.a.
- lodgepole pine/grouse whortleberry c.t.
- subalpine fir/pinegrass p.a., pinegrass phase
- Douglas-fir/common snowberry p.a.
- subalpine fir/blue huckleberry p.a., myrtle pachistima phase
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.

### Soils

Parent material: local alluvium derived from loess and volcanic ash over residuum from basalt

The primary soils are shallow to very deep (10 to greater than 60 inches) over hard bedrock. These soils are well drained. Soils that support forested communities have a thin (about one inch) forest litter layer on the surface. The surface and subsurface layers consist of medium-textured soil materials with few to abundant rock fragments. The subsoils consist of moderately coarse-textured to moderately fine-textured soil materials with few to abundant rock fragments.

These soils classify as coarse-silty, mixed, active Vitrandic Paleboralfs (Islandpark series); loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts (Potrround series); loamy, mixed, superactive Lithic Cryoborolls (Spliten series); fine-loamy, mixed, superactive Argic Pachic Cryoborolls (Vadnais series) and fine-silty, mixed, superactive Vitrandic Paleboralfs (Huckridge series).

### Related LTA Units

- Unit 302 is dominated by potential natural communities in the subalpine fir series.
- Unit 303 has moderate relief and a distinct pattern of warm, south facing slopes that support potential natural communities in the Douglas-fir series and cold, north facing slopes that support potential natural communities in the subalpine fir series.

### Comments

The majority of this delineation consists of Ecological Units 1000, 1123 and 1307. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 302 - Island Park Tablelands - Conifer Forest

### Summary

The largest extent of the Island Park Tablelands unit is located on the northern portion of the Island Park Caldera. This area of the caldera rim appears to have been eroded down by outwash events, lowering the relief of the rhyolitic rim materials. The rim remained slightly higher than the adjacent caldera floor and thus was not covered by the basalt flows of the caldera floor. The entire area has been overlaid with wind blown silts varying in thickness from about 30 to greater than 70 inches. (fig. 19)

### Setting

Subsection: Island Park M331Aa

Landform: caldera floor and dissected tablelands

Elevation: 5900 to 7000 feet

Slope: 2 to 15 percent

Relief: 20 to 150 feet

Drainage: The landscape is highly dissected by a dendritic drainage pattern. The Henry's Fork of the Snake River and its spring fed tributaries flow through and drain this unit.

Precipitation: 27 to 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 37 to 38 degrees F

Geology: igneous rocks

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/grouse whortleberry p.a., pinegrass phase
- subalpine fir/blue huckleberry p.a., blue huckleberry phase

### Soils

Parent material: local alluvium, colluvium or residuum derived from rhyolitic tuff, loess and volcanic ash

The primary soils are very deep (greater than 60 inches) and well drained. Soils supporting forested communities have a thin (about one inch) forest litter layer on the surface. The surface and subsurface layers consist of medium-textured soil material with few or common rock fragments. The subsoils consist of moderately coarse-textured to moderately fine-textured soil materials with many or abundant rock fragments. The substratums begin at a

depth of 40 or more inches and consist of coarse-textured or moderately coarse-textured soil materials with abundant rock fragments.

These soils classify as loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series) and loamy-skeletal, mixed, active Vitrandic Paleboralfs (Flatstone series).

### Related LTA Units

- Unit 301 has high diversity among the potential natural communities.
- Unit 303 has moderate relief and a distinct pattern of warm, south facing slopes that support potential natural communities in the Douglas-fir series and cold, north facing slopes that support potential natural communities in the subalpine fir series.

### Comments

The majority of this delineation consists of Ecological Map Units 1700 and 1720. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 303 - Island Park Rim - Conifer Forest

### Summary

The Island Park Caldera was formed by the collapse of a larger rhyolite shield volcano. The Island Park Rim is the remaining lower slopes of the volcano. The caldera rim was probably covered by wind blown silts as were other parts of the caldera. Because the rim slopes are steep, much of this material has eroded away exposing the rhyolite materials. (fig. 20)

### Setting

Subsection: Island Park M331Aa

Landform: foothills, mountains, dissected tablelands, shield volcanos, plains, plateaus and escarpments of plateaus

Elevation: 5600 to 7800 feet

Slope: 2 to 60 percent

Relief: 100 to 600 feet

Drainage: The remnant caldera rim is highly dissected by a parallel drainage pattern.

Intermittent streams occur in drainages.

Precipitation: 20 to 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 36 to 39 degrees F

Geology: igneous rocks

### Vegetation

Dominant Potential Natural Communities

- Douglas-fir/common snowberry p.a.
- subalpine fir/pinegrass p.a., pinegrass phase
- subalpine fir/blue huckleberry p.a., blue huckleberry phase
- Douglas-fir/pinegrass p.a., pinegrass phase

### Soils

Parent material: local alluvium or colluvium derived from igneous rocks, loess and volcanic ash

The primary soils are very deep (greater than 60 inches) and well drained. Soils supporting forested communities have a thin (about one inch) forest litter layer on the surface. The surface and subsurface layers consist of medium-textured soil material with few to many rock fragments. The subsoils consist of moderately coarse-textured to moderately fine-textured soil materials with few to abundant rock fragments. The substratums begin at a depth of 40 inches or more and consist of coarse-

textured to medium-textured soil materials with abundant rock fragments.

These soils classify as loamy-skeletal, mixed, superactive Vitrandic Cryoborolls (Lagall series); loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series) and fine-loamy, mixed, superactive Cryic Paleborolls (Nopla series).

### Related LTA Units

- Unit 301 has low relief.
- Unit 302 has low relief and is dominated by potential natural communities in the subalpine fir series.

### Comments

The majority of this delineation consists of Ecological Map Units 1228, 1506, 1575, 1592 and 1594. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.



## 401 - Northern Madison Plateau - Conifer Forest

### Summary

The northern portion of the Madison Plateau developed from a large ignimbrite sheet flow that overtopped the east rim of the Island Park Caldera. The ignimbrite materials have been overlaid with finer loess and ash layers varying in thickness from about 30 to 60 inches. (fig. 21)

### Setting

Subsection: Madison-Pitchstone Plateaus  
M331Ab

Landform: plateaus and escarpments of plateaus

Elevation: 6200 to 8300 feet

Slope: 2 to 60 percent

Relief: 20 to 100 feet

Drainage: The landscape is slightly dissected by both parallel and dendritic drainage patterns.

Surface drainage is rare in this area because the underlying materials have high porosity.

Precipitation: 50 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 32 degrees F

Geology: igneous rocks

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/grouse whortleberry p.a.
- subalpine fir/grouse whortleberry p.a., grouse whortleberry phase
- whitebark pine/Ross sedge p.a., lodgepole pine phase
- a mosaic of: whitebark pine/elk sedge p.a. and whitebark pine/grouse whortleberry p.a.

### Soils

Parent material: local alluvium derived from loess and volcanic ash over residuum from mixed volcanic ash and tephra

The primary soils are very deep (greater than 60 inches). Non-disturbed areas have a thin (about one inch) forest litter layer of organic materials on the surface. The mineral soil surfaces and subsurfaces consist of medium-textured materials; the subsoils consist of moderately coarse-textured materials; the substratums consist of coarse textured soil materials that contain cobbles and stones.

These soils are classified as ashy, glassy Alfic Vitricryands (Oleo series), ashy-skeletal, glassy Vitrandic Cryochrepts (Lasac series), ashy-skeletal, glassy Humic Vitricryands (Castan series) and ashy, glassy Typic Vitricryands (Dashiki series).

### Related LTA Units

- Unit 402 is lower in elevation, warmer and is more dissected.
- Unit 403 has been glaciated and has glacial till parent material.
- Unit 404 has been glaciated and has glacial till parent material.

### Comments

The majority of this delineation consists of Ecological Map Units 1225, 1570 and 1573. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 402 - Southern Madison Plateau - Conifer Forest

### Summary

The southern portion of the Madison Plateau developed from a large ignimbrite sheet flow that overtopped the east rim of the Island Park Caldera. The ignimbrite materials have been reworked by alluvial and colluvial process in most of this unit. This has resulted in areas of rhyolitic tuff from the caldera rim being exposed in parts of the unit. All of the area has been covered by loess and ash layers varying in thickness from about 30 to greater than 60 inches. (fig. 22)

### Setting

Subsection: Madison-Pitchstone Plateaus  
M331Ab

Landform: dissected tablelands

Elevation: 6600 to 7900 feet

Slope: 15 to 35 percent

Relief: 50 to 200 feet

Drainage: The landscape is highly dissected by both parallel and dendritic drainage patterns. Surface drainage is rare in this area because the underlying materials have high porosity.

Precipitation: 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 36 degrees F

Geology: igneous rocks

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/grouse whortleberry p.a.,  
pinegrass phase

### Soils

Parent material: local alluvium or colluvium  
derived from mixed volcanic rocks and loess

The primary soils are very deep (greater than 60 inches). Non-disturbed areas have a thin (about one inch) forest litter layer of organic materials on the surface. The mineral soil surfaces and subsurfaces consist of moderately coarse-textured soil materials; the subsoils and substratums consist of moderately coarse-textured soil materials that contain cobbles and stones.

These soils are classified as loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts (Rhylow series).

### Related LTA Units

- Unit 401 is higher in elevation, cooler and is less dissected.
- Unit 403 has been glaciated and has glacial till parent material.
- Unit 404 has been glaciated and has glacial till parent material.

### Comments

The majority of this delineation consists of Ecological Unit 1585. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 403 - Western Falls River Basin - Conifer Forest

### Summary

The Pitchstone Plateau has undergone mountain glaciation. The western portion of this plateau is dominated by dissected tablelands. The LTA is on these tablelands. (fig.23)

- Unit 402 has parent material derived from loess and ash over residuum from mixed volcanic ash and tephra. This unit is higher in elevation and cooler.
- Unit 404 is on foothills, is cooler and more moist.

### Setting

Subsection: Madison-Pitchstone Plateaus  
M331Ab

Landform: dissected tablelands

Elevation: 6200 to 6700 feet

Slope: 4 to 15 percent

Relief: 20 to 100 feet

Drainage: The landscape is slightly dissected by a dendritic drainage pattern. A multi-basinal drainage pattern has developed in areas of the landscape that contain kettles.

Precipitation: 32 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 37 degrees F

Geology: igneous rocks

### Comments

The majority of this delineation consists of Ecological Unit 1516. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/blue huckleberry p.a., huckleberry phase

### Soils

Parent material: local alluvium derived from loess, glacial till and volcanic ash

The primary soils are moderately deep (20 to 40 inches) to dense basal till material. Non-disturbed areas have a one to three inch forest litter layer of organic materials on the surface.

The mineral soil surfaces and subsurfaces consist of moderately coarse-textured soil materials; the subsoils consist of moderately coarse-textured soil materials that contain gravel; the substratums consist of dense basal till material.

These soils are classified as ashy, amorphic Typic Vitricryands (Winegar series).

### Related LTA Units

- Unit 401 has parent material derived from loess and ash over residuum from mixed volcanic ash and tephra. This unit is higher in elevation and cooler.

## 404 - Eastern Falls River Basin - Conifer Forest

### Summary

The Pitchstone Plateau has undergone mountain glaciation. The eastern portion of this plateau is dominated by a mountain glaciation landscape. Erosional features are both depositional and erosional in this area. Rock outcrop is common on south facing slopes. Glacial erratic occur at random. (fig. 24)

### Setting

Subsection: Madison-Pitchstone Plateaus  
M331Ab

Landform: foothills

Topography: The topography is characterized by hilly to moderately steep slopes.

Elevation: 6500 to 8000 feet

Slope: 4 to 25 percent

Relief: 20 to 100 feet

Drainage: The landscape is slightly dissected by a dendritic drainage pattern. Perennial and intermittent streams are common.

Precipitation: 44 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 34 degrees F

Geology: igneous rocks

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/blue huckleberry p.a., grouse whortleberry phase

### Soils

Parent material: local alluvium, colluvium or residuum derived from igneous rocks, loess and volcanic ash

The primary soils are moderately deep to very deep (20 to greater than 60 inches) to hard bedrock. Non-disturbed areas have a one to three inch forest litter layer of organic materials on the surface. The mineral soil surfaces and subsoils consist of moderately coarse-textured soil materials that contain gravel.

These soils are classified as loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series).

### Related LTA Units

- Unit 401 had parent material derived from

loess and ash over residuum from mixed volcanic ash and tephra. The unit is also higher in elevation and cooler.

- Unit 402 has parent material derived from loess and ash over residuum from mixed volcanic ash and tephra. The unit is also higher in elevation and cooler.
- Unit 403 is on dissected tablelands and is warmer and drier.

### Comments

The majority of this delineation consists of Ecological Map Unit 1600. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 501 - Teton Foothills - Conifer Forest

### Summary

The Teton Range is a fault block mountain range trending north to south. The range grades from forested foothills in the west through forested mountain sideslopes in the mid portion to alpine summits in the east. The northern portion of the forested foothills are on a volcanic cap that overlays sedimentary and other volcanic materials. The volcanic cap is dissected by parallel drainages draining the upper slopes of the subsection. The southern portion of the forested foothills are on a thin mantle of colluvium over mixed sedimentary bedrock. Slope stability is a concern on these materials. (fig. 25)

### Setting

Subsection: Teton Range M331Dm

Landform: dissected tablelands and foothills of mountains

Elevation: 5300 to 7800 feet

Slope: 4 to 50 percent

Relief: 100 to 200 feet

Drainage: The landscape is moderately dissected by a parallel drainage pattern. Intermittent streams occur in small drainages. Perennial streams occur in larger drainages.

Precipitation: 24 to 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 36 to 38 degrees F

Geology: mixed

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/blue huckleberry p.a., myrtle pachistima phase
- subalpine fir/sweetcicely p.a., myrtle pachistima phase
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.

### Soils

Parent material: local alluvium or colluvium derived from mixed rocks and loess

The primary soils are very deep (greater than 60 inches). Non-disturbed areas with timber have a thin (about one inch) forest litter layer of organic

materials on the surface. The mineral soil surfaces and subsurfaces consist of medium-textured soil materials; at lower elevations the subsoils consist of medium-textured soil materials; at higher elevations subsoils and substratums consist of moderately coarse-textured and medium textured soil materials that contain gravel and cobbles.

These soils are classified as fine-silty, mixed, superactive Vitrandic Paleboralfs (Huckridge series), loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series), loamy-skeletal, mixed superactive Pachic Cryoborolls (Povey series) and loamy-skeletal, mixed, superactive Vitrandic Cryoborolls (Edgway series).

### Related LTA Units

- Unit 502 is on mountains and is cooler.
- Unit 503 is on mountains and has alpine vegetation.

### Comments

The majority of this delineation consists of Ecological Unit 1224, 1315 and 1595. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 502 - Teton Mountains - Conifer Forest

### Summary

The Teton Range is a fault block mountain range trending north to south. The range grades from forested foothills in the west, through forested mountain sideslopes in the mid portion to alpine summits in the east. This LTA occupies the mid portion and is characterized by deep, east-west orientated canyons with broad, wedge-shaped inter-canyon ridgetops. Many canyons are glacial troughs with wide bottomlands. (fig. 26)

### Setting

Subsection: Teton Range M331Dm

Landform: mountains

Elevation: 6400 to 9800 feet

Slope: 30 to 70 percent

Relief: 100 to 300 feet

Drainage: Weakly dissected by a parallel drainage pattern.

Precipitation: 25 to 45 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 30 to 35 degrees F

Geology: mixed rocks

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/Rocky Mountain maple p.a.
- subalpine fir/western meadowrue p.a.
- subalpine fir/ blue huckleberry p.a., myrtle pachistima phase
- a mosaic of: subalpine fir/gooseberry currant p.a., whitebark pine phase; tall forb communities
- Douglas-fir/Oregongrape p.a., whortleleaf snowberry phase
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.

### Soils

Parent material: local alluvium and colluvium derived from mixed sources

The primary soils are very deep (greater than 60 inches). The mineral soil surfaces and subsurfaces consist of medium-textured soil materials; the subsoils and substratums consist

of medium-textured through moderately fine-textured soil materials and contains gravel. These soils are classified as loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series), loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts (Rhylow series), loamy-skeletal, carbonatic Calcic Pachic Cryoborolls (Katpa series), loamy-skeletal, carbonatic Calcic Cryoborolls (Fritz series), fine-loamy, mixed, active Abruptic Paleboralfs (Yodal series) and loamy-skeletal, mixed, superactive Pachic Cryoborolls (Povey series).

### Related LTA Units

- Unit 501 is on foothills and is warmer.
- Unit 503 is on higher elevation mountains and has alpine vegetation.

### Comments

The majority of this delineation consists of Ecological Units 1170, 1172, 1175, 1216 and 1316. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

This unit forms a wide buffer zone between the high alpine environment and the Teton Basin. Access routes to the high country are provided by canyons in this group. Timber is largely confined to steep, north-facing slopes. Most of the landtypes have high herbaceous productivity potential.

## 503 - Teton Range Crest - Alpine

### Summary

The Teton Range is a fault block mountain range trending north to south. The range grades from forested foothills in the west through forested mountain sideslopes in the mid portion to alpine summits, basins and peaks in the east. These alpine positions form the scenic skyline of the range when viewed from the west. This LTA occupies these alpine positions and is characterized by glacial basins, scoured ramp-like surfaces and alpine peaks. (fig. 27)

### Setting

Subsection: Teton Range M331Dm  
Landform: mountains and cirques  
Elevation: 8600 to 12,200 feet  
Slope: 4 to 70 percent  
Drainage: Little stream dissection.  
Precipitation: 22 to 45 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)  
Average annual air temperature: 30 to 35 degrees F  
Geology: dominantly limestone

### Vegetation

Dominant Potential Natural Communities

- low alpine forb communities
- subalpine fir/grouse whortleberry p.a., whitebark pine phase
- white marshmarigold c.t.

### Soils

Parent material: local alluvium, colluvium and residuum derived dominantly from limestone with some volcanic ash, loess and glacial till.

The primary soils are moderately deep (20 to 60 inches). The mineral soil surfaces and subsurfaces consist of moderately coarse-textured to medium-textured soil materials; the subsoils and substratums consist of moderately coarse-textured to fragmental soil material.

These soils are classified as Typic Cryochrepts, fragmental, carbonatic Typic Cryochrepts (Oorang series), ashy, amorphic Typic Vitricryands (Winegar series) and Oxyaquic Cryochrepts.

### Related LTA Units

- Unit 501 is on foothills, has a forest potential.
- Unit 502 is on lower elevation mountains and has a forest potential.

### Comments

The majority of this delineation consists of Ecological Units 1280, 1331 and 1414. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

A major management problem in this LTA is disturbed areas are very difficult to stabilize with vegetation because of the short growing season and, to a lesser extent, the high frost heave potential of the soils. Avalanche hazard in the rockland areas is high.

## 601 - Low Snake River Mountains - Conifer Forest

### Summary

The Big Hole Range consists of multiple, parallel overthrusts and benches of mixed rocks and eolian material that have been modified by thrust faulting. The northeast side of the range consists of moderate relief foothills and mountains on mixed sediments. The LTA is on these foothills and mountains. (fig. 28)

### Setting

Subsection: Big Hole Mountains M331Dk

Landform: foothills and mountains

Elevation: 5600 to 9800 feet

Slope: 15 to 70 percent

Relief: 100 to 300 feet

Drainage: The landscape is highly dissected by a structurally controlled dendritic drainage pattern. Perennial streams are common in larger drainages.

Precipitation: 24 to 45 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 35 to 38 degrees F

Geology: sedimentary rocks

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/Rocky Mountain maple p.a.
- subalpine fir/mallow ninebark p.a.
- subalpine fir/blue huckleberry p.a., myrtle pachistima phase
- subalpine fir/western meadowrue p.a.
- a mosaic of: subalpine fir/goose currant p.a., whitebark pine phase; tall forb communities
- Douglas-fir/Oregongrape p.a., whortleleaf snowberry phase
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.

### Soils

Parent material: local alluvium and colluvium derived from mixed sedimentary rock with a loess influence

The primary soils are very deep (greater than 60 inches). The mineral soil surfaces consist of medium-textured soil materials. The subsoils consist of moderately coarse-textured through

fine-textured soil materials that contain gravel and cobbles.

These soils are classified as fine, mixed, superactive Calcic Pachic Cryoborolls (Tophat series), loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series), loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts (Rhylow series), loamy-skeletal, mixed, superactive Pachic Cryoborolls (Povey series), loamy-skeletal, mixed, superactive Vitrandic Cryoborolls (Lagall series), loamy-skeletal, carbonatic Calcic Cryoborolls (Fritz series) and fine-loamy, mixed, active Abruptic Paleboralfs (Yodal series).

### Related LTA Units

- Unit 602 has parent material derived from limestone and loess.
- Unit 603 has parent materials derived from mixed volcanic rocks and loess.

### Comments

The majority of this delineation consists of Ecological Units 1175, 1216, 1219, 1303 and 1316. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

Active slope failures are common in some areas in this LTA.



## 602 - High Snake River Mountains - Conifer Forest

### Summary

The Big Hole Range consists of multiple, parallel overthrusts and benches of mixed rocks and eolian material that have been modified by thrust faulting. The southwest side of the range consists of high relief mountains on limestone. These mountains are dissected by parallel drainages draining the northeastern part of the range. The LTA is on these high relief mountains. (fig. 29)

### Setting

Subsection: Big Hole Mountains M331Dk

Landform: mountains

Elevation: 5200 to 10,000 feet

Slope: 40 to 70 percent

Relief: greater than 1000 feet

Drainage: The landscape is highly dissected by deeply incised drainages. Perennial streams are common.

Precipitation: 22 to 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 35 to 38 degrees F

Geology: dominantly limestone

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/mallow ninebark p.a.
- Douglas-fir/Oregongrape p.a., whortleleaf snowberry phase
- low alpine forb communities

### Soils

Parent material: local alluvium and colluvium derived from limestone and loess

The primary soils are very deep (greater than 60 inches). Non-disturbed areas with timber have a thin (about one inch) forest litter layer of organic materials on the surface. Soil profiles consist of medium-textured soil materials that contain gravel.

These soils are classified as loamy-skeletal, carbonatic Calcic Cryoborolls (Fritz series), loamy-skeletal, mixed, superactive Calcic Cryoborolls (Gany series) and Typic Cryochrepts.

### Related LTA Units

- Unit 601 has parent materials derived from mixed sedimentary materials.
- Unit 603 has parent materials derived from mixed volcanic rocks and loess.

### Comments

The majority of this delineation consists of Ecological Units 1106 and 1280. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 603 - Big Hole Foothills - Conifer Forest

### Summary

The Big Hole Range consists of multiple, parallel overthrusts and benches of mixed rocks and eolian material that have been modified by thrust faulting. The north end of the range ends under a gentle dip slope. This LTA is located on the dip slope. There is a volcanic cap in these areas that overlays sedimentary and other volcanic materials. (fig. 30)

### Setting

Subsection: Big Hole Mountains M331Dk

Landform: foothills, mountains and dissected tablelands

Elevation: 5300 to 8000 feet

Slope: 4 to 50 percent

Relief: 100 to 200 feet

Drainage: The landscape is moderately dissected by a parallel drainage pattern. Small intermittent and some perennial streams occur in larger drainages.

Precipitation: 24 to 26 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 38 degrees F

Geology: mixed

### Vegetation

Dominant Potential Natural Communities

- subalpine fir/blue huckleberry p.a., myrtle pachistima phase
- subalpine fir/sweetcicely p.a., myrtle pachistima phase
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.

### Soils

Parent material: local alluvium or colluvium derived from mixed volcanic rocks and loess

The primary soils are very deep (greater than 60 inches). Non-disturbed areas with timber have a thin (about one inch) forest litter layer of organic materials on the surface. The mineral soil surfaces and subsurfaces consist of medium-textured soil materials; at lower elevations the subsoils consist of medium-textured soil materials; at higher elevations subsoils and substratums consist of moderately coarse-

textured and medium-textured soil materials that contain gravel and cobbles.

These soils are classified as fine-silty, mixed, superactive Vitrandic Paleboralfs (Huckridge series), loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series), loamy-skeletal, mixed, superactive Pachic Cryoborolls (Povey series) and loamy-skeletal, mixed, superactive Vitrandic Cryoborolls (Edgway series).

### Related LTA Units

- Unit 601 has parent materials derived from mixed sedimentary materials.
- Unit 602 has parent materials derived from limestone and loess.

### Comments

The majority of this delineation consists of Ecological Map Units 1224, 1315 and 1646. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

## 701 - High Caribou Mountains - Conifer Forest

### Summary

The Caribou Range is a southeast to northwest trending overthrust. The northeast side of the range is moderate relief foothills and mountains on mixed sediments. The LTA is on these foothills and mountains. (fig. 31)

### Setting

Subsection: Caribou Range Mountains M331Di

Landform: foothills and mountains

Elevation: 5600 to 8500 feet

Slope: 15 to 70 percent

Relief: 100 to 300 feet

Drainage: The landscape is strongly dissected by a structurally controlled dendritic drainage pattern. Perennial streams are common in larger drainages.

Precipitation: 24 to 25 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 37 to 38 degrees F

Geology: sedimentary rocks

### Vegetation

Dominant Potential Natural Communities

- Douglas-fir/Oregongrape p.a., whortleleaf snowberry phase
- subalpine fir/mallow ninebark p.a.
- an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/California brome p.a.
- subalpine fir/sweetcicely p.a., myrtle pachistime phase
- a mosaic of: subalpine fir/mallow ninebark p.a.; subalpine fir/pinegrass p.a., pinegrass phase

### Soils

Parent material: local alluvium and colluvium derived from mixed sedimentary materials with a loess influence

The primary soils are very deep (greater than 60 inches). The mineral soil surfaces consist of medium-textured soil materials. The subsoils consist of moderately coarse-textured through fine-textured soil materials that contain gravel and cobbles.

These soils are classified as loamy-skeletal, mixed, superactive Pachic Cryoborolls (Povey series), loamy-skeletal, mixed, superactive Vitrandic Cryoborolls (Lagall and Edgway series), loamy-skeletal, carbonatic Calcic Cryoborolls (Fritz series) and Cryochrepts.

### Related LTA Units

- Unit 702 is on low relief foothills and basins and has a shrub potential.

### Comments

The majority of this delineation consists of Ecological Units 1219, 1303 and 1970. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

Active slope failures are common in some areas in this LTA.

## 702 - Low Caribou Mountains - Shrub Steppe

### Summary

The Caribou Range is a southeast to northwest trending overthrust. The southwest side of the range is low relief foothills and basins on fine textured marine sediments. The LTA is on these foothills and basins. (fig. 32)

### Setting

Subsection: Caribou Range Mountains M331Di  
Landform: foothills

Elevation: 5700 to 7600 feet

Slope: 15 to 35 percent

Relief: less than 100 feet

Drainage: The landscape is moderately dissected by a dendritic drainage pattern. Intermittent streams and few perennial streams occur.

Precipitation: 16 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow).

Average annual air temperature: 38 degrees F

Geology: sedimentary rocks

### Vegetation

Dominant Potential Natural Communities

- mountain big sagebrush/Idaho fescue p.a.
- mountain big sagebrush/whortleleaf snowberry/Idaho fescue p.a.

### Soils

Parent material: local alluvium over residuum derived from siltstone and shale with a loess influence

The primary soils are very deep (greater than 60 inches). The mineral soil surfaces consist of medium-textured soil materials. The subsoils consist of fine-textured soil materials.

These soils are classified as fine, mixed, superactive Argic Cryoborolls (Quirt series) and coarse-silty, mixed, superactive Calcic Pachic Cryoborolls (Tetonia series).

### Related LTA Units

- Unit 701 is on higher relief foothills and mountains and has a forest potential.

### Comments

The majority of this delineation consists of Ecological Units 1332 and 1333. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

Active slope failures are common in this LTA.

**File Code:** 1920/2400/2600/2670/5100  
**Route To:** (Resource Specialists)

**Date:** May 2, 2005

**Subject:** Clarification of Targhee RFP Wildland Fire Use Direction in Mgt Prescription Areas 2.6.2 and 5.1.x

**To:** District Rangers, Branch Chiefs

During development of the Wildland Fire Use Guidebooks, there have been several questions regarding application of wildland fire use in specific management prescription areas. This letter clarifies the intent of the direction in several management prescriptions, 2.6.2, 5.1, 5.1.3, and 5.1.4.

The RFP is generally permissive unless specific activities are curtailed or not allowed by forestwide guidance or management prescription guidance. At the time the 1997 RFP was adopted, the term wildland fire use had not been coined. The RFP, however, does have goals to use prescribed fire and managed natural fire “to achieve desirable soil and habitat characteristics, improve forest health, and create or maintain diversity in vegetative structure, composition, and patterns” and to “restore fire as an ecological process”. There are no standards or guidelines specific to wildland fire use or managed natural fire. However, the RFP does contain direction to use vegetation treatments that “emulate natural ecological processes to maintain or restore properly functioning ecosystems”. (RFP, III-6 and III-12)

**Management Prescription 2.6.2: Grizzly Bear Core Area**

The primary emphasis for this prescription is to provide secure habitat for grizzly bears. The prescription direction does not mention managed natural fire or wildland fire use. There are two standards for fire in Rx 2.6.2, one which prohibits prescribed fire and one that states “in the event of a fire that warrants suppression, only minimum impact suppression techniques will be allowed.” This implies that there are fires that do not warrant suppression. The prescription also contains an objective to develop a fire management plan in coordination with any adjacent wilderness fire plans to address wildfires. The Jedediah Smith Wilderness Fire Management Plan (1997), allows managed natural fires. (RFP, III-99)

Since the prescription direction does not prohibit managed natural fire or wildland fire use, it can be applied in this prescription area as described in the Wildland Fire Use Guidebook.

**Management Prescriptions 5.1, 5.1.3, 5.1.4: Timber Management**

The primary emphasis for these prescriptions is on scheduled wood-fiber production and use. Goals are to manage the lands to promote the production of commodity and noncommodity resources. The prescriptions also contain goals to “establish fire

**File Code:** 1920/2400/2600/5100

**Date:** February 25, 2005  
February 25, 2005

**Route To:** (Resource Specialists)

Subject: Clarification of Targhee and Caribou RFP Created Opening Definitions

To: District Rangers, Branch Chiefs

During implementation of both the Targhee and Caribou Revised Forest Plans (RFP), there have been numerous questions regarding the definition of the term “created opening”. The following explanation clarifies the intent of the direction in both RFP’s.

The overarching goal of both RFP’s is to move the landscapes towards historic ecosystem processes and patterns and maintain them to be dynamic, sustainable, and resilient. Both plans emphasize restoring and maintaining vegetative communities within their historic range of variability and allowing processes such as fire to play their natural role. In the past several years, the Forest has emphasized aspen restoration treatments and wildland fire use to meet these goals.

While developing the Wildland Fire Use Guidebooks and designing aspen restoration projects, forest managers have raised questions regarding how or if the “created opening” definitions apply to these type projects. **The intent of both plans was that created opening limits only apply where commercial timber harvest is done using even-aged silvicultural methods.** The aim of prescribed and wildland fire use is not to remove commercial timber. The maximum created opening size guidelines in the RFP do not apply to prescribed or wildland fire areas. The intent of the direction in both RFP’s is that acres in nonstocked and seedling stages following natural or prescribed fire would be considered when calculating the amount of created openings in a given area, as required in Targhee RFP Management Prescriptions 5.1.4 and 5.4. The size-class structure resulting from the fire also applies towards the size-class distribution guideline for goshawks in both RFP’s.

In addition, there has been some confusion regarding the inclusion of fire in the definition of created openings in the Targhee RFP. In order to be consistent with the intent, the definition in the glossary of the Targhee RFP (RFP G-9) should read:

**“Created Opening** – An opening in the forest cover (nonstocked and seedling stages) created by the application of even-aged silvicultural practices (clearcuts, seed cuts of a shelterwood, or group selection). Acres in nonstocked and seedling stages following natural or prescribed fire in forested vegetation would also be considered when calculating the amount of created openings in a given area but fire is not subject to created opening size limitations.”

This is not a decision, it is clarification of the original intent of the direction in the RFP's based on project analyses. Thus, this is not subject to further analysis or administrative review. Please insure that all employees involved in planning vegetation management projects are aware of this clarification. If you or your staff have any further questions, please contact Cheryl Probert, Forest Planner, at (208) 557-5821.

/s/ Jerry B. Reese  
JERRY B. REESE  
Forest Supervisor

cc: Regional Office, P-A-L

## APPENDIX B

As described in the individual Establishment Records, the following are brief descriptions of each RNA and the associated fire management direction.

### MOOSE CREEK PLATEAU RNA

This RNA is located on the Island Park Ranger District, in the Moose Creek Plateau. The Moose Creek Plateau was selected as an RNA because of its high elevation forests of lodgepole pine, subalpine fir, and whitebark pine growing on droughty soils of obsidian sand. Of special interest was a depauperate site having sparse ground cover of Carex rossii and slightly more productive sites with ground cover of Vaccinium scoparium. Also, of interest and value was a forest in transition from seral lodgepole pine to climax subalpine fir and whitebark pine, caused by an epidemic of the mountain pine beetle. The 1988 Northfork Fire changed the cover type, but has not made the area less valuable.

Fire management direction for the Moose Creek Plateau RNA can be found on page 16 of the Establishment Record. That direction states: "Neither prescribed burning or livestock grazing are needed to maintain ecological conditions. Prescribed burning will not be allowed. Wildfire that originates within or threatens the RNA will be suppressed as soon as possible by methods that will cause the least disturbance."

### WYOMING CREEK PROPOSED RNA

This proposed RNA is located on the Ashton Ranger District in Prescription Area 2.1.1. Prescription area 2.1.1 is called SPECIAL MANAGEMENT AREAS and is described on pages III-79 through III-82. This management prescription applies to areas with unique cultural, geologic, botanical, or zoological resource values. This site was selected as a candidate for an RNA because the plant communities in this area are not known to occur at any research natural area on National Forest System lands in the Yellowstone Highlands Section. While evidence of past human disturbance is present at the site, the *Deschampsia cespitosa* at this site are described as "excellent, large and pristine." The Wyoming Creek site was assessed as the best opportunity in the Henry's Fork watershed to provide representation of *Deschampsia cespitosa* on National Forest System lands.

Fire management direction for this proposed RNA is identified on page III-6 and page III-80 of the RLMP. That direction is as follows:

#### Page III-6 Forestwide S&G's

When feasible and appropriate, use prescribed burning to dispose of slash in order to return the inorganic and organic chemicals in the foliage and small woody material to the soil, to reduce fire hazard and to provide seed beds for natural regeneration. (G)

#### Page III-80 Prescription Area S&G's

Prescribed fire, utilizing both management ignited and natural ignitions, may be used to maintain fire dependent characteristics of the area. (G)

### ROCK LAKE PROPOSED RNA

This proposed RNA is located on the Ashton Ranger District in Prescription Area 1.1.6. Prescription Area 1.1.6 is called DESIGNATED WILDERNESS and is described on pages III-67 through III-69. This proposed RNA is



located in the Winegar Hole Wilderness Area. This site was selected as a candidate for an RNA because a lake with large areas of lily-pad cover and surrounding vegetation was desired. Extensive wet meadows add to the aquatic features of this area.

Fire management direction for this proposed RNA is identified on page III-6 and pages III-68 and 69 of the RLMP. That direction is as follows:

Page III-6 Forest wide S&G's

When feasible and appropriate, use prescribed burning to dispose of slash in order to return the inorganic and organic chemicals in the foliage and small woody material to the soil, to reduce fire hazard and to provide seed beds for natural regeneration. (G)

Page III-68 Prescription Area S&G's

Natural and manager-ignited fires will be allowed to burn under predetermined prescriptive conditions as described in the Wilderness Fire Management Action Plan. (G)

### **Meadow Canyon RNA**

Most of this RNA is located on the Dubois Ranger District with the remainder of the area being situated on the Lost River District of the Challis N.F. This RNA includes two of the finest alpine tundra areas to be found in Idaho as well as an unusual number of rare plant species. Meadow Canyon includes forest communities of Douglas-fir and Engelmann Spruce. This RNA also includes substrates mainly of limestone but also of quartzite which, with climate, affect the character and distribution of the associated plant communities. The RNA harbors uncommon species of wildlife including the Rocky Mountain goat, the prairie falcon, and the golden eagle. These species are sensitive to the presence of man and are indicators of the pristine nature of the Meadow Canyon area. In brief, this area was selected as an RNA because it includes truly unique conditions; it is a refuge for a number of unusual and rare plants and animals; and it provides an opportunity for studies which would benefit management of similar situations.

There is no management direction stated in the Establishment Record. As stated in the area descriptions of the RNA's if there is no direction stated in the Establishment Record then you will refer to the Forest Service Manual 4063. This states that in developing the prescription for fire, consider the role of natural fire in sustaining or managing the vegetation. If fire is prescribed, only part of the RNA shall be allocated for prescribed burning and part shall be reserved for permanent protection.

### **Copper Mountain RNA**

Copper Mountain RNA is an alpine mountain and ridge top of a major spur ridge jutting southward from the Beaverhead Mountains toward the upper Snake River valley in Idaho. It is all National Forest land surrounded by National Forest. This area was selected as an RNA because of its diverse alpine vegetation on calcareous substrate. The majority of the RNA is comprised of graminoid-dominated vegetation that ranges from sedge turf on exposed, wind-deflation sites to mesic grasslands. Diverse assemblages of grasses and forbs, including six species of *Poa*, occur in these sedge and grassland types. Other alpine habitats include rocky summits and talus. In addition, a high elevation component of Great Basin shrub-steppe and a small area of subalpine woodland are included in the RNA. This area also harbors some uncommon species of wildlife such as Rocky Mountain goats and Rocky Mountain Bighorn sheep.

Fire management direction for the Copper Mountain RNA can be found on page 15 of the Establishment Record. It states that fire is not needed to preserve alpine vegetation within this area. Therefore, prescribed burning will not be used. Wildfires will be suppressed using methods that will result in minimum disturbance of the area.

### **Webber Creek RNA**

Weber Creek RNA is located in the Beaverhead Mountains somewhat east of Italian Peak and includes the headwaters of the North Fork of Webber Creek. This area includes undisturbed, high elevation stands of mountain big sagebrush, climax whitebark pine and Douglas-fir communities. Engelmann spruce habitat types with both seral and climax stands, where wildfire probably has been the major influencing factor in the

establishment and development of these stands can be found here. This RNA also includes a wide variety of alpine plant communities, ranging from felsenmeer habitats on the summit plateau of Scott Peak to delta mudflats at the inlet of the uppermost lake. There are aquatic situations of lakes and streams with the uppermost lake in the alpine zone being of a special interest. In this RNA an tremendous display of Paleozoic sedimentary rock strata that have been compressed, folded, twisted, and fractured by geological forces can be found.

Fire management direction for the Webber Creek RNA can be found on page 20 of the Establishment Record. This states that wildfires that originate within or close to the RNA will be managed. Neither prescribed burning nor livestock grazing are needed to maintain ecological conditions. The area will be closed to livestock grazing and prescribed burning will not be used.

#### **Sheep Mountain RNA**

Sheep Mountain RNA is located on a mountaintop in the Lemhi Range. The area encompasses subalpine and alpine vegetation that is reflective of distinctive relationships between edaphic substrate and plant community composition. The area includes primarily alpine vegetation, but also some scattered individuals of whitebark pine at timberline. Predominant rock substrates are: limestone, dolomite, sandstone, low grade quartzite, firm quartzite, and granite. Elevations within the 624 acre natural area range from 9,840 feet to 10,865 feet on Sheep Mountain. National Forest System lands adjacent the RNA are managed intensively for mineral resource production.

Fire management direction for the Sheep Mountain RNA is found on page 14 and 15 of the Establishment Record. It states that wildfire will be actively suppressed in the RNA unless plans approved by the Intermountain Research Station Director and Region for letting fires burn. It goes on to say fire suppression will use methods and equipment that minimize disturbance to the RNA. On page 15, it states that prescribed natural fire may be needed to maintain ecological processes related to fire disturbance. This will have to go through an approval process as described on page 15 of the Establishment Record and coordinated with the two forests and three districts in which this RNA lies (Salmon-Challis; Leadore R.D. and Lost River R.D., Targhee N.F.; Dubois R.D.).

#### **Targhee Creek RNA**

Targhee Creek RNA is alpine and subalpine land which lies on the Idaho – Montana boundary within the recommended Lionhead Wilderness. This RNA consists of two glaciated basins and a lower canyon surrounded by alpine ridges. The area has a complex geology, mainly of Paleozoic and Precambrian rocks. A massive limestone wall occurs along the east side of the lower canyon. The area contains an extensive and diverse alpine zone that includes many described and undescribed vegetation types. The alpine flora and vegetation of Targhee Creek RNA is different than elsewhere in Idaho, being more similar to that of the Central Rocky Mountain alpine zone to the east and south. Clumps, stringers, and stands of large whitebark pine (*Pinus albicaulis*) trees are abundant. One of the glaciated basins contains six or more alpine and subalpine lakes. Both basins contain many small wet meadows at the base of cliffs and talus slopes, in depressions, and along streams. The meadows are located in both the alpine and subalpine zones and on various rock substrates, resulting in a diversity of vegetation. Several rare plant species occur in the area, including *Agoseris lackschewitzii*, *Draba incerta*, *Gentianella propinqua*, *Salix glauca*, *Telesonix jamesii*, *Saxifraga cernua*, and *Castilleja pulchella*. The RNA is located within grizzly bear habitat. Peregrine falcons have been observed in the area at certain times of the year.

Fire Management direction for the Targhee Creek RNA is found on page 15 of the Establishment Record. It states that Wildfire will be actively suppressed unless plans approved by the Intermountain Research Station Director provide for letting natural fires burn. Fire suppression will use methods and equipment that minimize disturbance to the RNA. Use of heavy equipment in suppression efforts is prohibited. Use of chemical fire retardants on the RNA is discouraged. Prescribed burning will be used only as specified in approved research projects or when needed to meet RNA management goals.

#### **Burns Canyon RNA**

Burns Canyon RNA is situated on a steep, mountainous tract of complex sedimentary rock in the Overthrust Belt of Idaho. The area contains a stabilized landslide which probably resulted from an earthquake. A low- to moderate-gradient (300 feet/mile) stream traverses the site for about 1 mile and is mostly narrow and confined by steep canyon slopes. Most (75%) of the riparian zone is dominated by the red-osier dogwood/cow parsnip

(*Cornus stolonifera*/*Heracleum lanatum*) community type with lesser amounts of the mountain alder/red-osier dogwood community. A short stream segment supports a coyote willow (*Salix exigua*)/mesic forb community. A subirrigated terrace about 50 m wide is dominated by a Douglas hawthorne (*Crataegus douglasii*) community. South-facing slopes are occupied by mountain big sagebrush/bluebunch wheatgrass (*Artemisia tridentata* ssp. *vaseyana*/*Agropyron spicatum*) and mountain mahogany(*Cercocarpus ledifolius*)/bluebunch wheatgrass habitat types, plus stands of bigtooth maple (*Acer grandidentatum*) and aspen (*Populus tremuloides*). On north-facing slopes, seral stands of aspen and lodgepole pine (*Pinus contorta*) occur on lower slopes, Douglas-fir (*Pseudotsuga menziesii*) habitat types occur up to mid-elevations, and subalpine fir (*Abies lasiocarpa*) types are found on the higher slopes. Open shrubfields of ninebark (*Physocarpus malvaceus*), shiny-leaf ceanothus, and Rocky Mountain maple (*Acer glabrum*) occur on mid-elevation north-facing slopes. A slump area near the highest ridge supports a forb-grass cover type. The riparian zone and the site are not grazed.

Fire Management direction for the Burns Canyon RNA is found on pages 15 and 16 of the Establishment Record. It states that wildfire will be actively suppressed unless plans approved by the Intermountain Research Station Director provide for letting natural fires burn. Fire suppression will use methods and equipment that minimizes disturbance to the RNA. Use of heavy equipment in suppression efforts is prohibited. Use of chemical fire retardants on the RNA is discouraged. Prescribed burning will be used only as specified in approved research projects or when needed to meet RNA management goals. Protection of the vegetation values of the area from destructive wildfire should occur through precautionary measures.

#### **Thurmon Creek RNA**

Thurmon Creek RNA encompasses a portion of the southeast slope of Thurmon Ridge. This ridge is a segment of the Henrys Fork Caldera; it is low, moderately steep, and southwest to northeast trending. Several cold springs and streams emerge from the base of the ridge and are the main features of the RNA. Other features include wet sedge meadows, mainly along the streams; several forest types, including aspen (*Populus tremuloides*), Douglas-fir (*Pseudotsuga menziesii*), and lodgepole pine (*Pinus contorta*) types; shrub types including mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and chokecherry (*Prunus virginiana*) types; and habitat for bald eagles, grizzly bear, and elk.

The Fire Management direction for the Thurmon Creek RNA is found on page 19 of the Establishment Record. It states that because the Thurmon Creek RNA is in a State Game Preserve Thurmon Ridge and the slope above the springs is heavily used by elk. This use may require prescribed burning on the slope above the springs to maintain elk habitat. However, natural fires will be suppressed as soon as practical by methods that will cause a minimum of disturbance.

#### **Willow Creek RNA**

Willow Creek RNA contains an unusual species mixture of bigtooth maple (*Acer grandidentatum*) with limber pine (*Pinus flexilis*), Rocky Mountain juniper (*Juniperus scopulorum*), and Douglas-fir (*Pseudotsuga menziesii*) on dissected, sloping land along the outer slopes of a caldera segment that borders Island Park. This mixture includes a scattered understory of Rocky Mountain maple (*Acer glabrum*), serviceberry (*Amelanchier alnifolia*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), and other shrub and forb species. Bigtooth maple is at the northern edge of its distribution in RNA. Two aspen (*Populus tremuloides*) community types occur in the area. Both types have rich and dense understories of shrub, forb, and grass species in excellent condition. The topography of the area is interesting. The RNA comprises a portion of Big Bend Ridge, a remnant segment of a volcanic caldera. The western unit of the RNA is underlain by tuff that erupted around 2 million years ago, while the eastern unit is underlain by another kind of tuff that erupted approximately 1.3 million years ago. These tuffs have different mineralogies, which resulted in different weathering rates and characteristics. The western unit has abrupt, steep-walled canyons and very shallow soils. The eastern unit has gentle slopes and deeper soil. The western unit supports the limber pine, bigtooth maple, and mountain big sagebrush types. The eastern unit contains the Douglas-fir habitat types and aspen community types.

Fire Management direction for the Willow Creek RNA is found on page 16 of the Establishment Record. It states that fire that originates within or threatens the RNA will be suppressed as soon as practicable by methods that will cause the least disturbance.

#### **Sheep Falls Proposed RNA**

This proposed RNA is located on the Ashton Ranger District in Prescription Area 2.1.1. Prescription area 2.1.1 is called SPECIAL MANAGEMENT AREAS and is described on pages III-79 through III-82. This management prescription applies to areas with unique cultural, geologic, botanical, or zoological resource values. Sheep Falls proposed RNA lies along a section of the Henrys Fork of the Snake River, where it flows through a shallow, but steep-sided canyon. Relatively broad, flat river terraces below the canyon rim comprise a majority of the acreage. Sheep Falls, a long, cascading rapid, is located on the downstream boundary of the RNA. Lodgepole pine is the major tree cover of the RNA and is climax to Douglas-fir habitat types on the canyon sides and a subalpine fir habitat type on the river terraces. A small inclusion of mountain big sagebrush/Idaho fescue habitat type occurs on an area with shallow soil. There is little riparian vegetation in the RNA due to basalt palisades immediately adjacent to the Henrys Fork.

Fire management direction for this proposed RNA is identified on page III-6 and page III-80 of the RLMP. That direction is as follows:

Page III-6 Forestwide S&G's

When feasible and appropriate, use prescribed burning to dispose of slash in order to return the inorganic and organic chemicals in the foliage and small woody material to the soil, to reduce fire hazard and to provide seed beds for natural regeneration. (G)

Page III-80 Prescription Area S&G's

Prescribed fire, utilizing both management ignited and natural ignitions, may be used to maintain fire dependent characteristics of the area. (G)

File Code: 1920/2400/2600/2670/5100  
Route To: (Resource Specialists)

Date: May 2, 2005

Subject: Clarification of Targhee RFP Wildland Fire Use Direction in Mgt Prescription Areas 2.6.2 and 5.1.x

To: District Rangers, Branch Chiefs

During development of the Wildland Fire Use Guidebooks, there have been several questions regarding application of wildland fire use in specific management prescription areas. This letter clarifies the intent of the direction in several management prescriptions, 2.6.2, 5.1, 5.1.3, and 5.1.4.

The RFP is generally permissive unless specific activities are curtailed or not allowed by forestwide guidance or management prescription guidance. At the time the 1997 RFP was adopted, the term wildland fire use had not been coined. The RFP, however, does have goals to use prescribed fire and managed natural fire “to achieve desirable soil and habitat characteristics, improve forest health, and create or maintain diversity in vegetative structure, composition, and patterns” and to “restore fire as an ecological process”. There are no standards or guidelines specific to wildland fire use or managed natural fire. However, the RFP does contain direction to use vegetation treatments that “emulate natural ecological processes to maintain or restore properly functioning ecosystems”. (RFP, III-6 and III-12)

**Management Prescription 2.6.2: Grizzly Bear Core Area**

The primary emphasis for this prescription is to provide secure habitat for grizzly bears. The prescription direction does not mention managed natural fire or wildland fire use. There are two standards for fire in Rx 2.6.2, one which prohibits prescribed fire and one that states “in the event of a fire that warrants suppression, only minimum impact suppression techniques will be allowed.” This implies that there are fires that do not warrant suppression. The prescription also contains an objective to develop a fire management plan in coordination with any adjacent wilderness fire plans to address wildfires. The Jedediah Smith Wilderness Fire Management Plan (1997), allows managed natural fires. (RFP, III-99)

Since the prescription direction does not prohibit managed natural fire or wildland fire use, it can be applied in this prescription area as described in the Wildland Fire Use Guidebook.

**Management Prescriptions 5.1, 5.1.3, 5.1.4: Timber Management**

The primary emphasis for these prescriptions is on scheduled wood-fiber production and use. Goals are to manage the lands to promote the production of commodity and noncommodity resources. The prescriptions also contain goals to “establish fire protection objectives for the area and desired fuel conditions” and to have fire management strategies which “emphasize preservation and protection of timber and range values scheduled for current use.” The guidelines for fire/fuels state that “wildfires will normally be suppressed” and that “prescribed fire may be used to reduce fuel loading; obtain natural regeneration; improve livestock forage conditions; for wildlife habitat improvement; and for other purposes that meet the needs of this prescription.” There are not standards that apply to fire/fuels and nothing specifically addresses managed natural fire or wildland fire use. (RFP III-136)

Since the prescription direction does not prohibit managed natural fire or wildland fire use, it can be applied in this prescription area as described in the Wildland Fire Use Guidebook.

This is not a decision, it is clarification of the original intent of the direction in the 1997 Targhee RFP considering updated terminology and policy. Thus, this is not subject to further analysis or administrative review. Please insure that all employees in wildlife, timber, fire suppression, and wildland fire use planning are aware of this clarification. If you or your staff have any further questions, please contact Kraig Carroll, Fire Management Specialist, at (208) 557-5830 or Cheryl Probert, Forest Planner, at (208) 557-5821.

/s/ Jerry B. Reese  
JERRY B. REESE  
Forest Supervisor

cc: Regional Office, P-A-L

**THE GREATER YELLOWSTONE AREA**  
**INTERAGENCY FIRE MANAGEMENT PLANNING**  
**AND**  
**COORDINATION GUIDE**



**INCORPORATING**

<b>Beaverhead-Deerlodge National Forest</b>	<b>Shoshone National Forest</b>
<b>Gallatin National Forest</b>	<b>Bridger-Teton National Forest</b>
<b>Custer National Forest</b>	<b>Caribou-Targhee National Forest</b>
<b>Grand Teton National Park</b>	<b>Yellowstone National Park</b>

**Prepared Under the Direction of  
The Greater Yellowstone Coordinating Committee**

Revised March 2000  
Revised April 1995  
(Original Publication 1990)

# GREATER YELLOWSTONE COORDINATING COMMITTEE



TO: GYA Fire Management Officers  
GYA Regional Fire and Aviation Staff

Date: March 2000

Enclosed is the Interagency Fire Management Planning and Coordination Guide for the National Forests and Parks in the Greater Yellowstone Area. Its purpose is to provide coordinated direction for fire management issues and operational procedures that must be addressed and implemented throughout the GYA. It is responsive to policy changes that result from the National Fire management Policy Review and will provide effective coordination of wildland fire use, wildland fire suppression activities and prescribed fire programs. Please attach it to your unit fire policy and operational documents and consider it an integral part of your normal working procedures.

*Janette Kaiser*

Janette Kaiser  
Supervisor, Beaverhead-Deerlodge National Forest

*David P. Garber*

David P. Garber  
Supervisor, Gallatin National Forest

*Carole 'Kniffy' Hamilton*

Carole 'Kniffy' Hamilton  
Supervisor, Bridger-Teton National Forest

*Rebeca Aus*

Rebeca Aus  
Supervisor, Shoshone National Forest

*Mike Paterni, for*

Nancy T. Curriden  
Supervisor, Custer National Forest

*Jerry B. Reese*

Jerry Reese  
Supervisor, Targhee National Forest

*Jack Neckels*

Jack Neckels  
Superintendent, Grand Teton National Park

*Marvin O. Jensen, for*

Michael V. Finley  
Superintendent, Yellowstone National Park



# INTRODUCTION

The Greater Yellowstone Area (GYA) is made up of parts of six National Forests and two National Parks. Contiguous portions of these Parks and Forests encompass roughly 12.0 million acres of Federal reservations, plus state lands, National Wildlife Refuges, public lands (Bureau of Land Management) and privately owned lands. This vast area lies within three states - Montana, Idaho and Wyoming and includes all or parts of 12 counties.

The Greater Yellowstone Area is world-renowned for its scenery, wildlife, wilderness, rivers, hunting, fishing, outdoor recreation opportunities, geologic, and thermal features. Other resources, although not as well known, are critically important to the people living in and adjacent to this area. Activities such as timber harvesting, firewood gathering, livestock grazing, mining, oil and gas development, outfitting and tourism associated with recreation are important segments of local economies.

Since their inception, National Forests and National Parks have been managed differently, as specified in their original Congressional mandates. National Parks were founded upon the principles of preservation, public enjoyment, and non-interference with natural processes. National Forests were established on conservation principles; the wise multiple-use of natural resources. The National Park Service, an agency of the United States Department of the Interior, is responsible for administration of the National Park System. The Forest Service, an agency of the United States Department of Agriculture, is responsible for administration of National Forests. In the early 1960's, Forest and Park Managers in the GYA recognized the need for coordination on a number of issues and programs which crossed jurisdictional boundaries.

The Greater Yellowstone Coordinating Committee (GYCC) was born of this need and consists of the following: The Agency Administrators of the Beaverhead-Deerlodge, Custer, Gallatin, Shoshone, Caribou-Targhee, and Bridger-Teton National Forests and the Grand Teton and Yellowstone National Parks. A member (an Agency Administrator of a GYA Unit) will be designated annually by the GYCC to serve as the Fire Management Representative. The Representative's role will be to serve as the primary link between the GYA Fire Management Advisory Group (FMAG) and the GYCC.

The events of the 1994 fire season created a renewed awareness and concern among Federal land management agencies and constituents about safety, the impacts of wildland fire, and the integration of fire and resource management. As a result of those concerns and in response to specific recommendations in the report of the South Canyon Fire Interagency Management Review Team (IMRT), the Federal Wildland Fire Management Policy and Program Review was chartered and completed in 1995. The Secretaries of Interior and Agriculture convened this review to reaffirm and ensure that uniform Federal policies and cohesive and cooperative interagency and intergovernmental fire management programs exist.

The review represents the latest stage in the evolution of wildland fire management and recommends policy changes that associate suppression and management of wildland fires into a single direction achieving multidimensional objectives. This policy directs Federal agencies to achieve a balance between suppression to protect life, property, and resources, and fire use to regulate fuels and maintain healthy ecosystems. Most of the previous barriers and constraints to expanded fire use are removed through this policy.

The 1995 Report provides nine guiding principles that are fundamental to the success of the Federal wildland fire management program and implementation of review recommendations. They are:

- Firefighter and public safety is the first priority in every fire management activity.

- The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.
- Fire management plans, programs, and activities support land and resource management plans and their importance.
- Sound risk management is a foundation for all fire management activities.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Fire management plans must be based on the best available science.
- Fire management plans and activities incorporate public health and environmental quality considerations.
- Federal, Tribal, State, and local interagency coordination and cooperation are essential.
- Standardization of policies and procedures among Federal agencies is an ongoing objective.

The Report also recommends a set of 13 Federal wildland fire policies in the areas of: safety, planning, wildland fire, prescribed fire, preparedness, suppression, prevention, protection priorities, interagency cooperation, standardization, economic efficiency, wildland/urban interface, and administration and employee roles.

#### *STATEMENT OF PURPOSE*

The purpose of this document is to address fire management issues and operational procedures, which in the view of the GYCC, must be addressed and implemented on an area-wide basis in a consistent manner.

#### **OBJECTIVES**

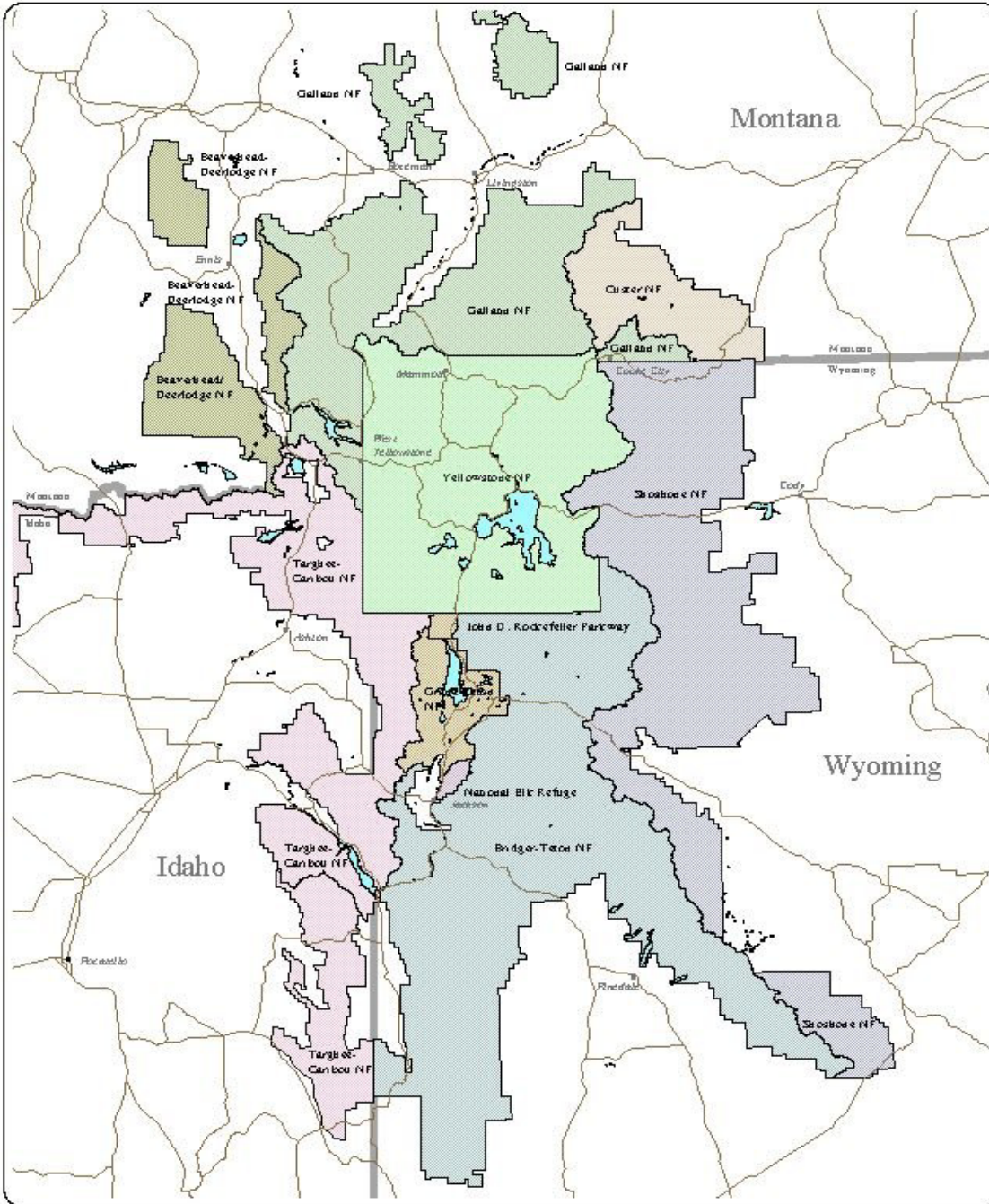
The specific objectives of this document are to:

1. Coordinate fire management planning within the Greater Yellowstone Area.
2. Provide for specific operating principles and procedures to assure effective interagency coordination and management of wildland fires and prescribed fires occurring in the Greater Yellowstone Area.
3. Define the role of the Greater Yellowstone Coordinating Committee in fire management within the Greater Yellowstone Area.

This is not a comprehensive planning document. It will not achieve levels of fire management planning required for individual units, nor is it designed to serve as a "master" fire management plan for the Greater Yellowstone Area. The responsibility to conduct professional level fire management planning

remains with individual units, commensurate with their departmental and agency policies and guidelines.

# The Greater Yellowstone Area: Federal Administrative Units



Legend	
	Major Lakes
	Major Roads
	State Boundaries
	NF National Forest
	NP National Park
	NWR National Wildlife Refuge

Approximate Scale 1:2,200,000  
 0 20 40 Kilometers

This map was made from Orvis Yellowstone Data provided by the Orvis Yellowstone Coordinating Committee and the Gallatin National Forest. Map by H. Shovic, April 20, 2000. Version 1.0, gyaadmin@orvis.com



## **AREA ADDRESSED BY THIS DOCUMENT**

A multitude of issues which cross the jurisdictional boundaries of individual Parks or Forests face the Greater Yellowstone Coordinating Committee: fire management, geothermal development, fisheries and wildlife management, and more. Unfortunately, not all issues fit a fixed definition of exactly what land base constitutes the GYA or what many refer to as the Greater Yellowstone Ecosystem. Certain organizational, logistical, and topographic realities, require that this be more clearly defined for purposes of fire management.

This document will be viewed as addressing all of the Greater Yellowstone Area as defined in the GYCC Aggregation Document and the Lander Ranger District of the Shoshone National Forest and the Kemmerer Ranger District and the southern portions of the Big Piney and Pinedale Ranger Districts of the Bridger-Teton National Forest and that area north of I-90 of the Gallatin National Forest.

## **PLANNING AND COORDINATION**

### **GENERAL**

Individual units within the GYA are required to have fire management plans that meet agency standards and national policy. Individual fire management plans will incorporate the GYA operating principles contained in this document. In addition, the GYCC has agreed to continue several specific operational procedures which will ensure a high level of interagency fire management planning and coordination in the GYA.

These include:

1. To conduct an annual spring and fall meeting of all GYA Fire Management Officers (FMO's).
2. Maintaining the interagency peer review process for new and revised NPS fire management plans and that portion of USFS land use plans that focus on wildland fire use.
3. Operate and apply the GYA Fire Situation Report.
4. Adhere to the GYA Preparedness Plan.
5. Utilize the GYCC Fire Management Advisory Group (FMAG) to serve as professional level consultants to the GYCC.
6. Maintain a consistent process for the management of prescribed fires and wildland fires in the GYA as described in the *Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide*.

A key component of individual fire management plans, and a cornerstone of coordinated fire management in the GYA, is conducting comprehensive joint planning along the boundaries of neighboring land management units and completion of mutually acceptable fire management

plans. Each unit will work closely with their neighboring units in the development and/or revision of the individual plan/plans as per this document.

## **COORDINATION MEETING OF GYA FIRE MANAGEMENT OFFICERS**

Fire Management Officers from each GYA unit will meet each spring and fall to review fire management planning status and operational procedures. Discussions will include topics such as preseason conditions, fire season potential, operational reviews, situation and status reporting, mobilization and preparedness plans, prescribed fire, review of cooperative agreements, review of Coordination Guide for currency, land management planning, data base coordination, education, and media coordination.

Key assignments to be made at the spring meeting include Peer Review Group membership and GYCC Fire Management Advisory Group (FMAG) membership. An annual set of "Goals and Objectives" will be developed by the GYA FMO's at the spring meeting. The purpose of the "Goals and Objectives" will be to strengthen interagency coordination and to monitor progress on key GYA Fire Management issues. A brief Annual Report will be prepared by the Fire Management Advisory Group providing highlights of the GYA Fire Season and status of progress on the Annual Goals and Objectives.

Individual GYA units will coordinate and host the meeting on a rotating basis. Participation by Forest Supervisors, Park Superintendents, and Regional Staff members is encouraged.

## **GYA INTERAGENCY PEER REVIEW PROCESS FOR FIRE MANAGEMENT PLANS**

To complement the normal agency review and approval procedure, a GYA peer review process will be maintained for the purpose of reviewing individual fire management plans. The process will occur as follows:

1. A three-person (minimum number) Peer Review Team will be appointed annually at the Spring GYA FMO meeting. Team membership will include at least one fire specialist and one wilderness/resource specialist.
2. When individual NPS fire management plans, or that portion of USFS land use plans that focus on wildland fire for resource benefits, are ready for review, they will be sent to the members of the GYA Peer Review Team for a detailed evaluation; to be followed by a meeting of the Review Team and the Forest or Park FMO. This process must occur in a timely fashion and prior to or concurrently with normal agency review.

Implementation of individual NPS fire management plans, or that portion of USFS land use plans that focus on wildland fire for resource benefits, may occur only after completion of the normal agency approval process and approval of all applicable agreements.

## **GYA SITUATION REPORT**

Current information on the fire situation in each GYA unit is critical for responsible fire management planning and implementation. Sharing of fire situation information between units in the GYA will be coordinated by the Bozeman Interagency Dispatch Center (BZC). This report will be consolidated into the GYA Situation Report and be electronically available each day. The GYA Situation Report will provide each unit with a description of fire activity, resource

availability, and potential for continued fire activity to facilitate coordinated planning and public information efforts.



## **GYA FIRE MANAGEMENT ADVISORY GROUP (FMAG)**

In order to enhance coordinated management of large, potentially large and/or complex fire incidents within the GYA, a GYCC Fire Management Advisory Group (FMAG) is established. Participants in this group shall consist of a minimum of three GYA FMO's from two agencies. Other federal, state, and local officials will be consulted as needed. This group, including a chairperson and a co-chairperson, will be selected for a two year term, at the annual spring FMO meeting. The FMAG will be activated by any one of the following conditions:

1. Discretion of any GYA Agency Administrator.
2. GYA in Preparedness Level III or higher, regardless of number of fires.

The Chairperson will monitor the GYA Situation Report on a daily basis during the fire season and will activate the group when any one of the criteria is met. Once activated, the FMAG will assess the overall fire situation in the GYA on a daily basis and make recommendations to the affected Agency Administrator(s) and the GYCC. The FMAG's recommendations will be based on local, regional, and national fire situation; resource availability; current and projected fire behavior; potential threat to life and property; air quality impacts; and social, economic, and political impacts of GYA fire management activities. The FMAG will not function as a Multi-Agency Coordination (MAC) Group per se, but will provide input into Geographical MAC Groups. The Chairperson, or the Co-Chairperson, will be the primary link to the MAC Group.

FMAG function is to:

1. Serve as professional level consultants to the GYCC and provide advice on appropriate management strategies for wildland fire use and prescribed fire as requested.
2. Recommend to the GYCC when wildland fire use or prescribed fire may pose unacceptable risk.
3. Recommend to the GYCC when the totality of the fire circumstances warrants representation by the GYA in a Geographic MAC Group.
4. Recommend to the GYCC the coordination for preparedness planning, severity operations, fire restrictions, etc.
5. Establish periodic coordination conference calls as necessary.
6. Coordinate the agendas, guest speakers, and assure logistics are completed for the bi-annual meetings.
7. Assure documentation of meetings and conference calls are completed through the formatted proceedings and notes.
8. Leads and finalizes the development of annual goals and objectives.
9. Completes the end of season report and presents results, issues, and expectations to the GYCC.

10. Conducts briefings to the GYCC as necessary.

## **WILDLAND FIRE MANAGEMENT**

### **WILDLAND FIRE PLANNING AND ASSESSMENT**

The *Wildland and Prescribed Fire Management Policy, Implementation Procedures Reference Guide* are the approved management procedures for the GYA. Adoption of a standard methodology enables the NPS and USFS to apply a consistent approach to wildland fire management. Wildland Fire Implementation Plans (WFIP) will be completed to the necessary stages, for each wildland fire. Specific coordination understandings are included in the *Greater Yellowstone Area, Interagency Fire Management Agreement*. (Appendix A).

#### *ABSENCE OF AN APPROVED FIRE MANAGEMENT PLAN*

If an approved fire management plan for resource benefits is not present for a particular unit, then the only available option is suppression of the wildland fire and appropriate action will be taken immediately.

#### *HUMAN-CAUSED FIRE*

Human-caused fires will not include resource benefits as a consideration and the fires will be suppressed.

#### *APPROVED FIRE MANAGEMENT PLAN*

Offers full advantage of fire policy flexibility under approved fire management plans. It allows the NPS and USFS to manage wildland fires in a manner that may achieve resource benefits when the fire management plan meets National Environmental Policy Act (NEPA) requirements and contains appropriate prescriptive criteria and language to specify the full range of management responses. Strategies will include the best options to safely, economically, and effectively accomplish the stated objectives.

### **APPROPRIATE MANAGEMENT RESPONSE**

The appropriate management response is defined as the specific actions taken in response to a wildland fire to implement protection and/or fire use objectives. It allows managers to utilize a full range of responses.

Management responses are programmed to accept resource management needs and constraints, reflect a commitment to safety, be cost effective, and accomplish desired objectives, while maintaining the versatility to vary intensity as conditions change.

## **WILDLAND FIRE USE**

Wildland fire use is defined as the management of naturally ignited wildland fires to accomplish specific, pre-stated resource management objectives, in predefined geographic areas, as outlined in fire management plans. Operational management is described in the Wildland Fire Implementation Plan (WFIP). This is the most complex of scenarios but offers full advantage of fire policy flexibility, under an approved fire management plan.

## **SUPPRESSION**

Suppression actions will consider values to be protected, least cost, resource damage caused by the suppression action and the first priority at all times, firefighter and public safety.

Management actions applied to a fire are identified in the fire management plan and can consist of aggressive initial attack to a combination of strategies. Objectives, environmental and fuel conditions, constraints, safety, and ability to accomplish objectives shall be considered to determine the appropriate management response. Each ignition will be responded to in a timely manner with appropriate forces utilizing safe and economically efficient tactics.

## **PRESCRIBED FIRE**

Fire has been a significant natural force in the evolution of the flora and fauna of the GYA ecosystem and continuation of these natural processes is desirable in much of the area. Prescribed fires are intentionally ignited by the units to accomplish a variety of management objectives ranging from hazard fuel reduction, to assisting in the reintroduction of fire to its natural role in the environment. A written approved prescribed fire plan must exist and NEPA requirements must be met prior to ignition. Trained, qualified, and experienced personnel must implement prescribed fires. Specific coordination understandings are included in the *Greater Yellowstone Area, Interagency Fire Management Agreement*. (Appendix A).

## **WILDLAND FIRE SITUATION ANALYSIS**

The Wildland Fire Situation Analysis (WFSA) is a decision making process in which the agency administrator or representative describes the situation, establishes objectives and constraints, compares multiple strategic wildland fire management alternatives, evaluates the expected effects of the alternatives, selects the preferred alternative, and documents the decision.

Use of the WFSA is integral to successful management of both wildland and prescribed fires. It serves as a contingency when fire spread and behavior exceed suppression efforts, when there is an inability to accomplish wildland fire use objectives, or when prescribed fires can no longer be implemented in accordance with the approved plan. The WFSA document can be used to compare alternatives reflecting the full range of appropriate management responses and can assess alternatives for realizing protection and/or resource benefits opportunities.

If a prescribed fire or wildland fire use for resource benefits is converted to a suppression oriented response, a WFSA will be developed. After this decision is made, the fire will never revert back to the original status.

## **ROLE OF THE GREATER YELLOWSTONE COORDINATING COMMITTEE IN LARGE FIRE INCIDENTS**

It is the role of the Greater Yellowstone Coordinating Committee (GYCC) to facilitate the coordinated management of the Greater Yellowstone Area (GYA). The GYCC does not have line authority over individual Agency Administrators or units within the GYA. The GYCC is composed of

the eight GYA Agency Administrators. Decisions and agreements made by the GYCC have wide-spread support and are implemented through normal preset lines of authority.

In the event of complex fire incidents, the GYCC will continue to serve in its role as a facilitator of communication, coordination, and effective cooperation between the individual units of the GYA. Agreements reached by GYCC members will be implemented through normal lines of authority. While the entire GYCC membership will not function as a MAC Group, individual members or their designees, may participate in a MAC Group. Whenever an Area Command is established, it will operate under a written Delegation of Authority clearly outlining both their geographic and functional role. This delegation will be signed by all Agency Administrators under whose authority the Area Command is operating. Area Command will re-delegate this authority to individual Incident Commanders consistent with individual WFSA's. Any Delegations of Authority between Agency Administrators and Incident Commanders in effect at the time an Area Command is established will be replaced by a new Delegation of Authority between the Incident Commander and Area Command. The GYCC may offer input and direction to MAC Groups and/or Area Command as necessary.

This document has outlined specific operational procedures for the GYCC to monitor the overall fire situation in the GYA during the fire season. These procedures will allow the GYCC to fulfill its role as a facilitator for coordinated management of the GYA, while maintaining the management integrity of each Department and legal responsibility of each Agency Administrator.

The Greater Yellowstone Coordinating Committee believes that guidelines and operational procedures outlined in this document will contribute greatly to a unified, coordinated approach to the Greater Yellowstone Area Fire Management Program.

**APPENDIX A  
INTERAGENCY FIRE MANAGEMENT  
AGREEMENT**

**00-IA-11011100-015**

**BETWEEN THE FOLLOWING GREATER  
YELLOWSTONE AREA AGENCIES**

**UNITED STATES DEPARTMENT OF AGRICULTURE**

**Forest Service**

**BEAVERHEAD-DEERLODGE NATIONAL  
FOREST**

Bridger-Teton National Forest

Custer National Forest

Gallatin National Forest

Shoshone National Forest

Targhee National Forest

**UNITED STATES DEPARTMENT OF THE INTERIOR**

**National Park Service**

**GRAND TETON NATIONAL PARK**

Yellowstone National Park

This Interagency Agreement is entered into between the above named administrative units of the United States Department of Agriculture, Forest Service, hereafter referred to as the “Forest Service” and the above named administrative units of the United States Department of the Interior, National Park Service, hereafter referred to as “NPS” under the below listed authorities:

Economic Act of June 30, 1932 (31 U.S.C. 1535, Sec 601)

Memorandum of Understanding between United States Department of the Interior and United

States Department of Agriculture, dated January 28, 1943

National Park Service Organic Act of August 1916 (16 U.S.C. 1)

Interagency Agreement Number 97-SIA-004 (Forest Service) and 1443-IA9560-97-002 (NPS) between United States Department of the Interior and United States Department of Agriculture, dated February 20, 1997 (FSM 1531.06c)

**I. PURPOSE AND STATEMENT OF MUTUAL BENEFITS AND INTERESTS:**

The purpose of this agreement will be that adjacent land management agencies coordinate planning and joint management of fire activities, which cross multi-jurisdictional boundaries.

This agreement will improve the effectiveness and efficiency of fire management and dispatching actions through the interagency cooperative sharing of resources between the above named administrative units.

**THIS AGREEMENT WILL BE COMPRISED OF THREE PARTS THAT ARE SPECIFIC TO PARTIES AS IDENTIFIED AND HAVE THEIR INDIVIDUAL PURPOSES AND MUTUAL BENEFITS STATED AS NECESSARY.**





**II. IT IS MUTUALLY AGREED AND UNDERSTOOD BY AND BETWEEN THE PARTIES**

**THAT:**

1. This Agreement supersedes the: “Interagency Fire Management Agreement” between Yellowstone and Grand Teton National Parks, and Beaverhead-Deerlodge, Custer, Shoshone, Targhee, Bridger-Teton, and Gallatin National Forests dated April 26<sup>th</sup>, 1995; the “Mutual Aid Agreement” between Yellowstone National Park and the Gallatin National Park, dated January 1<sup>st</sup>, 1991; the “Interagency Agreement” between Yellowstone National Park and the Gallatin National Forest, dated September 17<sup>th</sup>, 1992; and the “Agreement” between the Gallatin and Custer National Forests, dated September 13<sup>th</sup>, 1995.
  
2. MODIFICATION. Modifications within the scope of this agreement shall be made by mutual consent of the parties, by the issuance of a written modification, signed and dated by all parties, prior to any changes being performed. The Forest service is not obligated to fund any changes not properly approved in advance.
  
3. ACCESS TO RECORDS. Give the Forest Service or Comptroller General, through any authorized representative, access to and the right to examine all books, papers, or documents related to this agreement.
  
4. TERMINATION. Any party, in writing, may terminate this agreement in whole, or in part, at any time before the date of expiration. No party shall incur any new obligations for the terminated portion of this agreement after the effective date and shall cancel as many obligations as is possible. Full credit shall be allowed for each party’s expenses and all noncancellable obligations up to the effective date of the termination.

5. OBLIGATIONS. Nothing herein shall be considered as obligating the Forest Service to expend or as involving the United States in any contract or other obligations for the future payment of money in excess of funding approved and made available for payment under this agreement and modifications thereto.
  
6. FUNDING OF EQUIPMENT. Federal funding under this agreement is not available for reimbursement of cooperator purchase of equipment.
  
7. IDENTIFICATION NUMBER – FEDERAL, STATE & LOCAL GOVERNMENTAL AGENCIES. Furnish their tax identification number, or if the cooperator is a federal agency, their agency locator code, upon execution of this agreement.
  
8. AVAILABILITY OF FUNDS. Funding in the amount of \$0.00 is currently obligated for performance of this instrument through 30 September 2000. The Forest Service’s obligation for performance of this agreement beyond this date is contingent upon the availability of appropriated funds from which payment can be made. No legal liability on the part of the Forest service for any payment may arise for performance under this agreement beyond 30 September 2000, until funds are made available to the Forest Service for performance and until it receives notice of availability. Contingent upon Forest Service approval of continuance of work, a written modification to this agreement shall be issued to include funding for the subsequent performance period as described in the approved operating or financial plan, or budget.
  
9. BILLING. The maximum total cost liability to the cooperators for this agreement is \$0.00, presently. Transfer of funds to the Forest Service will be through either a manual system billing or an On-Line Payment and Collection System (OPAC) billing. The Forest Service will prepare billing under either system. The manual system shall contain the Agency Locator Code and Agreement number, as a minimum. The OPAC billing shall contain the following information:

FS Billing Document Number – Job Code – Instrument Number –

Agency Location Code – Budget Object Code

A detailed list of charges incurred will be made available upon request. Any excess funds not used for the agreed costs shall be refunded to the cooperator upon expiration of this agreement.

10. PRINCIPLE CONTACTS. The principle contacts for this agreement are the Forest Fire Management Officers, who at present are:

- Bill Breedlove                      Gallatin National Forest
- Wade Bureson                      Bridger-Teton National Forest
- Keith Birch                              Targhee National Forest
- Paul Mock                                Custer National Forest
- Beaverhead-Deerlodge National Forest
- Dave Sisk                                 Shoshone National Forest
- Len Dems                                 Grand Teton National Park
- Phil Perkins                              Yellowstone National Park

11. COMPLETION DATE. This instrument is executed as of the last date shown below and expires five (5) years from that date. At the end of that five-year period the agreement will be reviewed to determine suitability for renewal, modification or termination.

12. "Appropriate line officers" will be the Park Superintendent(s) and/or Forest Supervisors(s) of the involved agencies unless delegated in writing.

## **PART ONE**

### **AFFECTED AGENCIES:**

BEAVERHEAD-DEERLODGE NATIONAL FOREST; BRIDGER-TETON NATIONAL FOREST; CUSTER NATIONAL FOREST; GALLATIN NATIONAL FOREST; SHOSHONE NATIONAL FOREST; TARGHEE NATIONAL FOREST; GRAND TETON NATIONAL PARK; AND YELLOWSTONE NATIONAL PARK.

### **BACKGROUND AND NEED**

One of the major recommendations of the 1989 Interior and Agriculture Fire Policy Review Teams was that adjacent land management agencies improve their coordinated planning and joint management of fire activities, which cross-jurisdictional boundaries. In response to this recommendation, the Greater Yellowstone Coordinating Committee in June 1990 (revised 1992 and 1995) published "The Greater Yellowstone Area Interagency Fire Management Planning and Coordination Guide". The guide outlines operating principles and procedures for improving interagency fire management and coordination.

#### **I. PURPOSE:**

To establish specific operating procedures for the coordinated management of various fire activities, which have crossed, are planned to cross, or have potential to cross the administrative boundaries of individual Greater Yellowstone Area units. These activities include, but are not limited to:

1. Allowing wildland fire use fires to cross administrative boundaries;

2. Joint management of wildland fires;
3. Execution of prescribed fires;
4. Joint training and fire prevention efforts.

**II. STATEMENT OF MUTUAL BENEFITS AND FACTS:**

1. Safe and efficient management of wildland fire use fires and prescribed fires, require coordination and cooperation between the above agencies.
2. Lightning caused fires are a natural force that has always been operative in the Greater Yellowstone Ecosystem.
3. Lands common to the boundary of the above agencies contain areas with high values at risk, including timber, recreational developments, and private holdings.

**III. IT IS MUTUALLY AGREED AND UNDERSTOOD BY AND BETWEEN THE PARTIES THAT:**

**1. Management Coordination**

The following elements apply to all wildland fires and/or prescribed fires, which have crossed, are planned to cross, or have potential to cross agency boundaries:

1. Assignment of fiscal responsibility to each agency for management costs.
2. Assignment of responsibilities to keep the public, cooperators, and internal personnel informed.
3. Development of decision criteria for periodic revalidation and evaluation by the appropriate Administrators of each agency.
4. Ordering of resources thru a single Geographical Coordination Center
5. Incident/Project management will be by a single unified incident management organization.
6. Agency resource advisors will be assigned to coordinate with the incident/project management team.
7. Completion of a joint risk assessment: which includes threat to life and property, resource availability, and environmental impacts.
8. Incident reviews will be conducted jointly by the affected agencies as deemed appropriate.

The following additional elements apply as indicated to the various fire management activities:

## **A. Wildland Fire Use**

The following additional elements apply to wildland fire use fires, which have crossed, are planned to cross, or have potential to cross agency boundaries:

1. A Wildland Fire Implementation Plan will be developed in accordance with guidelines established in the “Wildland and Prescribed Fire Management Policy, Implementation Procedures and Reference Guide.” The Plan will incorporate the following concepts:
  1. Mutually agreed upon prescription criteria and objectives.
  2. Assignment of qualified personnel and adequate resources to implement the Wildland Fire Implementation Plan.
  3. Affected agency administrators will approve a mutual Wildland Fire Use Implementation Plan.

## **B. Prescribed Fire**

The following additional elements apply to prescribed fires which are planned to cross, or have potential to cross, agency boundaries:

1. A single Prescribed Burn Plan will be reviewed and approved by affected Agency Administrators. The plan will include required components of affected agencies.

- a. Assignment of qualified personnel and adequate resources to implement the Prescribed Fire Plan.

### **C. Wildland Fire, Unwanted Fires**

The following additional elements apply to unwanted wildland fires which have crossed, or have potential to cross, agency boundaries:

1. Development of a joint Wildland Fire Situation Analysis (WFSA), approved by appropriate Agency Administrators of each agency involved.
2. Development of a joint Delegation of Authority with mutually agreed upon suppression objectives.

## **2. Exchanges of Resources**

Unit based resources for wildland fire and prescribed fire activities may be exchanged directly between neighboring Dispatch Centers and adjacent GYA units under the nationally endorsed concept of closest available forces as provided. Management of suppression and support resources will be generally limited to initial and extended attack to adjacent units.



Unit based agency and contract resources may be shared for non-fire situations when such sharing is mutually agreed upon and is in the best interest of the government. The receiving agency agrees to reimburse the providing agency. Resources will be coordinated by the respective Dispatch Centers.

### **3. Training**

The agencies agree that they will exchange training schedules and information on a regular basis, and cooperate whenever possible on joint fire management training efforts.

### **4. Prevention and Public Education**

The agencies agree that they will cooperate wherever possible on joint fire prevention and public education efforts, particularly at trailheads that access more than one agency. Fire prevention activities will be managed by each Unit for lands within their jurisdiction.

As part of the public education effort, pamphlets, or other items highlighting the ecological role of fire in the GYA, and how fire is managed may be produced. The development of these items will be agreed upon by the units. The items would be available to visitors and during fire management activities. Initial production may be coordinated by one or more GYA units and funds will be transferred to a cooperative account set up by the unit/s. Initial production costs will be borne equally by each unit.

### **5. Detection & Dispatching Procedures**

Lookouts, other ground detection methods and agency air patrols will cooperate in the exchange of information on fires detected by or reported to them.

The agency receiving notification of a fire will immediately notify the jurisdictional agency. Requests for movement of resources and equipment across agency & unit boundaries will be coordinated by the respective agency dispatch offices.

## **6. Science Initiatives**

Units will cooperatively pursue opportunities for advancing science related initiatives as they apply to Greater Yellowstone Fire Management.

## PART TWO

### **AFFECTED AGENCIES:**

# **GALLATIN NATIONAL FOREST AND YELLOWSTONE NATIONAL PARK**

#### **I. PURPOSE:**

To give authority to Gallatin National Forest and Yellowstone National Park to cooperate in fire management activities in order to protect private and public lands, facilities, and human life on National Park or National Forest lands. This part outlines a proposed plan of operations for the prevention, detection and initial attack of wildland fires and the reinforcement assistance on wildland fires near mutual boundaries or joint Mutual Aid Zones of each agency.

The Mutual Aid Zones are defined as any land within the fire protection jurisdiction of each cooperating agency. The initial attack on wildland fire within the Mutual Aid Zone will operate on a closest-forces concept regardless of agency boundaries. The closest initial attack force to a wildland fire will respond when requested by the impacted agency.

The dispatch of Initial Attack resources will be on a requested basis by the agency with the suppression responsibilities for the Incident with the following exception. When an agency receives notification of an ignition in the vicinity of the towns of West Yellowstone, Gardiner, or Cooke City (see Recognized Areas), Initial Attack may be initiated on the fire if in the opinion of the agency receiving notification, the fire behavior or threat to resources, life, or property is such that a delay may result in unacceptable consequences. In this situation the agency maintaining jurisdiction will be notified concurrently when initial attack resources are dispatched.

Recognized Areas:

1. West Yellowstone: Legal area within one mile either side of the Park boundary east into the Yellowstone National Park and west into the Gallatin National Forest. This includes the eight miles North of West Yellowstone with the legal of T12S, R5E, sections 22, 27, 34 & T13S, R5E sections 3, 10, 15, 22, 26, 27; then 2 miles South of town with the legal of T13S, R5E, sections 33, 34 & T14S, R5E, section 3.
2. Gardiner: Legal area within T9S, R8E, sections 15, 16, 22, 23, 24, NE  $\frac{1}{4}$  21, and  $\frac{1}{4}$  mile either side of Highway 89 going south from the North Entrance of Yellowstone National Park leading into the Gardiner Canyon towards Mammoth and ending at Slide Lake.
3. Cook City: Legal area within T9S, R14E, section 25, 26, 27, 33, 34. Primarily Highway 212 from the eastern park boundary of Yellowstone National Park at Silver Gate up to  $\frac{1}{2}$  mile East of Cooke City.

This portion of the agreement is meant to supplement existing interagency agreements regarding fire suppression between the U.S.D.A. Forest Service and U.S.D.I. National Park Service.

## **1. Initial Attack and Reinforcements**

Where lands of one agency are included in the Mutual Aid Zone, the two agencies of this agreement will furnish suppression action to the extent possible, upon request except as specified in the PURPOSE section of this agreement, on any fire that occurs within that agency's jurisdictional boundaries.

When initial attack is undertaken by an agency not having jurisdictional authority on the land where the wildland fire occurs, the agency with jurisdictional authority will relieve the initial attack force as soon as practical. Activities will be coordinated between appropriate dispatch offices.

Where wildland fire(s) burn or threaten to burn on lands of both agencies, a boundary fire will exist. The agencies involved or threatened will cooperate to the fullest extent possible in suppressing and controlling the wildland fire(s). The Initial Attack Incident Commander who first initiates action will act as Incident Commander until an agreement on management of the wildfire is reached by the involved agencies.

## **2. Special Provisions**

**Preservation of Evidence:**

Where initial attack action is taken on wildland fires on lands of an adjoining agency, the Initial Attack Incident Commander will immediately gather and/or preserve information and evidence pertaining to the cause of the fire. Initial attack forces will notify the appropriate agency dispatch office of suspected person-caused fires as soon as possible.

**Access to Land:**

Initial attack forces and reinforcement of the agencies involved in this Agreement are hereby authorized to enter upon land under the jurisdiction of the other included agency where necessary to carry out this agreement. The responding agency will respond in a manner that is commensurate with the jurisdiction agency's land management policies.

**Yellowstone National Park:**

The use of bulldozers and other heavy equipment on Yellowstone National Park lands must have the authorization of the Park superintendent and the Rocky Mountain Regional Director. Use of motorized vehicles off of established and maintained roads and aircraft landings must have the approval of the Park Superintendent or his designee. Chainsaws may be used without prior authorization.

**Gallatin National Forest:**

The use of mechanized equipment, including helicopter long lining, within the Absaroka-Beartooth Wilderness and the Lee Metcalf Wilderness must be approved by the appropriate Forest Service Official. Requests for such approval will be made through the Bozeman Interagency Dispatch Center.

## **PART THREE**

### **AFFECTED AGENCIES:**

Beartooth Ranger District of the Custer National Forest,  
Gallatin National Forest, and Yellowstone National Park

#### **I. PURPOSE:**

To give authority to Gallatin National Forest, Yellowstone National Park, and the Beartooth Ranger District of the Custer National Forest personnel to cooperate in zone dispatching activities in order to protect private and public lands, facilities, and human life on National Park or National Forest lands.

#### **II. IT IS MUTUALLY AGREED AND UNDERSTOOD BY AND BETWEEN THE PARTIES THAT:**

The Bozeman Interagency Dispatch Center, hereafter referred to as the Center, will provide initial attack and support dispatch services for Gallatin National Forest and the Beartooth Ranger District of the Custer National Forest.



The Center will provide support dispatch services and training coordination for Yellowstone National Park and the Beartooth Ranger District. This will include the processing of Resource Orders to and from the Northern Rockies Coordination Center.

The Center will be located in the Gallatin National Forest Supervisor's Office in Bozeman, Montana.

During the primary fire season the Center requires a minimum of three dispatching personnel to provide adequate seven-day coverage. These positions being the Center Manager, the Assistant Center Manager, both provided by the Gallatin National Forest, and a Support Dispatcher, provided by the Yellowstone National Park.

The Agency contributing the employee to the Center is responsible for hiring, payroll, and other personnel action. The day-to-day supervision of Dispatch personnel will be handled through the Center's internal chain of command. Gallatin National Forest may assume hiring, payroll, and other personnel action responsibilities for the Support Dispatcher position upon mutual consent with Yellowstone National Park. In this event Yellowstone National Park will transfer funds to Gallatin National Forest through standard billing procedures to cover the cost for the Support Dispatcher.

An annual operating plan will be prepared by April 1<sup>st</sup> that at a minimum will specify: staffing, hours of operation, standard operating procedures/protocol, and procedures for expanded dispatch operations.

This agreement does not preclude either unit from establishing an independent expanded dispatch organization on an incident-by-incident basis as deemed appropriate by the responsible agency that could operate directly with the Northern Rockies Coordination Center. The ordering office will be responsible for tracking and recording keeping of all resources from mobilization through demobilization.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the last day written below:

**Applicable parts**  
**of this**  
**agreement**

April 5<sup>th</sup>, 2000      Janette Kaiser      One

Date      Janette Kaiser  
Supervisor, Beaverhead-Deerlodge National Forest

April 5<sup>th</sup>, 2000      Carole 'Kniffy' Hamilton      One

Date      Carole 'Kniffy' Hamilton  
Supervisor, Bridger-Teton National Forest

April 5<sup>th</sup>, 2000      Mike Paterni, for      One, Three

Date      Nancy T. Curriden

Supervisor, Custer National Forest

April 5<sup>th</sup>, 2000      David P. Garber      One, Two,

Three

Date      David P. Garber

Supervisor, Gallatin National Forest

April 5<sup>th</sup>, 2000      Rebecca Aus      One

Date      Rebecca Aus

Supervisor, Shoshone National Forest

April 5<sup>th</sup>, 2000      Jerry B. Reese      One

Date      Jerry Reese

Supervisor, Targhee National Forest

April 5<sup>th</sup>, 2000      Jack Neckels      One

Date      Jack Neckels  
Superintendent, Grand Teton National Park

April 5<sup>th</sup>, 2000      Marvin O. Jensen, for      One, Two,

Three  
Date      Mike Finley  
Superintendent, Yellowstone National Park

**THE GREATER YELLOWSTONE AREA  
PREPAREDNESS PLAN**

**PURPOSE**

To identify the level of Wildland and Prescribed Fire, severity and resource commitment within the Greater Yellowstone Area.

To identify actions to be taken by the Greater Yellowstone Area Fire Management Advisory Group (FMAG) under the guidelines of the Greater Yellowstone Coordinating Committee (GYCC) to assure an appropriate level of preparedness/readiness for the existing and potential situation.

To modify or curtail Unit fire management activities when essential to assure preparedness or response capabilities for situations within the GYA.

**GYA PREPAREDNESS LEVELS**

The Fire Management Advisory Group will monitor the GYA fire situation and preparedness levels and will determine the appropriate preparedness.

GYA preparedness levels are determined through a daily analysis of the GYA situation report by the FMAG. This is to assure that sufficient resources will be available for the GYA, various regions, or national situations.

Since the GYA is a subset of administrative units which lie within three separate geographic areas, the Rocky Mountain, Eastern Great Basin, and Northern Rockies. The determination of the preparedness level will be responsive to the three respective Geographic Area Preparedness Plans. At any one time, the three areas may be in different levels of preparedness as set forth in their respective regional plans. The GYA preparedness level will be determined based on the following criteria which have been derived from all three Geographical Area plans and the national preparedness plan, not superseding any of these plans. If and when at least two of the three Geographical plans reach a preparedness level higher than that of the GYA, the associated regional fire situation will be viewed as sufficient justification to raise the GYA level to the next higher preparedness level.

## **PREPAREDNESS LEVEL I**

### **Description:**

No large fire activity within the GYA. Units have low to moderate fire danger. Initial attack is successful and fires are manageable. Resources are adequate in the GYA.

### **ACTION RESPONSIBILITY**

Individual GYA Units will determine appropriate actions.  
Administrator

Agency

Certification that Wildland Fire Use fires meet resource objectives  
Administrator  
and adequate resources are available to ensure fires(s) continue to  
meet resource objectives through ensuing 24-hour period, given  
reasonably foreseeable weather conditions and fire behavior.

Agency

## PREPAREDNESS LEVEL II

### Description:

One or more units experiencing moderate to high fire danger. Multiple wildland fires occurring, initial attack successful on most fires and a potential exists for escapes to size class B or C. Escaped fires are manageable, potential for further growth is moderate. Resources are adequate in the GYA.

### ACTION RESPONSIBILITY

Level I action carry through.  
Staff

Unit FMO/Fire

Individual Agency Administrator's briefed as appropriate  
Staff

Unit FMO/Fire

Individual Units monitor and evaluate wildland and prescribed fire  
Staff  
activity and resource commitments in the GYA

Unit FMO/Fire



## **PREPAREDNESS LEVEL III**

### **Description:**

Two or more Units experiencing high to very high fire danger with no weather break expected within the next 48 hours. Two or more Units are experiencing size class C or D fires. One Unit requiring commitment of a Type I or Type II Incident Management Team. Units are experiencing resource shortages and are requiring assistance from their respective GACC. National Interagency Coordination Center (NICC) and/or Rocky mountain Area Coordination Center (RMACC), Eastern Great Basin Coordination Center (EGBCC), Northern Rockies Coordination Center (NRCC) are supporting wildland and/or prescribed fire activity in their or other Region(s).

## **ACTION RESPONSIBILITY**

Level I and II actions carry through. Staff	Unit FMO/Fire
GYA Fire Management Advisory Group (FMAG) is activated Chairperson	FMAG
Brief the GYCC Fire Management Representative and coordinate Chairperson wildland and prescribed fire activity in the GYA	FMAG
Periodic briefing for Regional Fire Staff and GYCC Managers providing wildland and prescribed fire situation update and evaluation Staff	FMAG Unit FMO/Fire

Evaluate need for a MAC Group Representative  
Regional Fire  
Management Staff

FMAG,  
  
and GYCC  
Fire  
Management

Coordinate repositioning of resources and ensure availability of  
qualified personnel for wildland and prescribed fire assignments

FMAG

Individual Units provide timely update on emerging or existing fire  
Staff  
situation to FMAG, respective Regional Office, and NICC through  
normal GYA situation reporting system

Unit FMO/Fire

Evaluate and document that Unit prescribed fire program objectives  
Staff  
can be accomplished given current commitment of resources and  
severity potential predictions. Evaluate all new wildland fire use fires  
against current and predicted fire behavior forecasts.

Unit FMO/Fire

## PREPAREDNESS LEVEL IV

### Description:

Two or more Units experiencing very high to extreme fire danger with no weather break expected within the next 48 hours. Multiple ignitions cause a number of fires to escape initial attack, resulting in size class D+ fires. Two or more Units experiencing project fires requiring commitment of Type I or Type II Incident Management Teams. Resource shortages are being experienced in the GYA and by GACC's, with two or more Regions being supported by NICC and/or GYA GACC's. Other national fire activity increasing the competition for resources, placing a drain on the normal GYA GACC's.

### ACTION RESPONSIBILITY

Level I, II and III actions carry through.  
Staff

Unit FMO/Fire

Wildland Fire Use and prescribed fire application can be continued or be initiated if the proposed action is approved by an agency at the Administrator regional or state office level. This approval must be based on an assessment of risk, impacts of the proposed actions on area resources Staff and activities and include feedback from the Geographical Area Mgt Rep MAC Group. The Geographic Area Mac Group provides information or perspectives to agencies wishing to proceed with or implement a wildland fire use or prescribed fire application. **The final decision to implement resides with the implementing agency.**

Unit FMO/Fire Staff  
Agency

FMAG  
Regional Fire

GYCC Fire

Increase coordination between GYA and potentially affected agencies involving Regions concerning prioritizing resources and fire Staff restrictions with other GYA Units and potentially affected neighbors.

FMAG  
Regional Fire

Evaluate potential of going to Level V and inform all GYA Units and Regional Staff of all affected agencies.

Staff

FMAG  
Regional Fire

PREPAREDNESS LEVEL V

**Description:**

Three or more GYA Units experiencing extreme fire danger with no weather break expected within the next 48 hours. Three or more Units experiencing major fires requiring the commitment of Type I Incident Management Teams. NICC and/or GYA GACC's actively supporting two or more Regions with fire activity. Significant competition for resources exists with the potential to exhaust all Agency resources.

**ACTION  
RESPONSIBILITY**

Levels I, II, III and IV actions carry through. Staff	Unit FMO/Fire
Wildland Fire Use and prescribed fire application can be continued or be initiated if the proposed action is recommended by the regional or state level. The National Agency representative will assess risk and Administrator impacts of the proposed actions and discuss with the National MAC Staff Group. This group will have an opportunity to provide information or Mgt Rep perspectives to agencies wishing to proceed with or implement a wildland National Rep fire use or prescribed fire application. <b>The final decision to implement resides with the implementing agency.</b>	Unit FMO/Fire Staff FMAG Agency Regional Fire GYCC Fire Agency
Evaluate need for a GYA representative on Geographical Area MAC Groups to assess resource availability, establish priorities, and Staff coordinate with other Geographical MAC Group(s).	GYCC, FMAG Unit FMO/Fire
Intensify coordination efforts with all fire protection agencies and	FMAG

news media.  
Staff  
Staff

Unit FMO/Fire  
Regional Fire

# GLOSSARY

**Appropriate Management Response** Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

**Appropriate Suppression Response** Specific actions taken in response to a wildland fire, with priority consideration given to firefighter and public safety.

**Burning Period** That part of each day when fires spread most rapidly.

**Confine** Confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions (burnout, helicopter water drops, etc.) and use of natural topographic features, fuel, and weather factors.

**Contain/Control** These terms, when used in the context of suppression strategies, are confusing since they also have tactical meanings. Containment and Control will continue to be used to represent the status of a particular fire for reporting purposes (e.g., a controlled fire, date of control, date of containment, etc.) and not to represent a type of management strategy.

**Contingency Plan** A back up plan of action for implementation when actions described in the primary plan are no longer appropriate. On prescribed fires these are the actions to be taken if the fire is declared out of prescription and is designated a wildfire.

**Drought Index** A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

**Energy Release Component** A number related to the rate of heat release (BTU's per second) per unit area (square foot) within the flaming zone of the fire. This component of the National Fire Danger Rating System is used by fire managers to assess fire potential in forest fuels.

**Escaped Fire** A fire which has exceeded, or is anticipated to exceed, initial action capabilities or the fire management direction or prescription.

**Expected Weather Conditions** Those weather conditions indicated as common, likely, or highly probable based on current and expected trends and their comparison to historical weather records. These are the most probable weather conditions for this location and time. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "expected weather conditions").

**Experienced Severe Weather Conditions** Those weather conditions that occur infrequently, but have been experienced on the fire site area during the period of weather records. For example, rare event weather conditions that significantly influence fires may have occurred only once, but their record can be used to establish a baseline for a worst-case scenario. These are the most severe conditions that can be expected. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "experienced severe weather conditions").

**Fire Group** A collection of similar habitat types and their associated fire ecology.

**Fireline Intensity** The amount of heat released in BTU's per foot of fire front per second. It related to the difficulty of containment of a fire.

**Fire Management Area (FMA)** A sub-geographic area within an FMU that represents a predefined ultimate acceptable management area for a fire managed for resource benefits. This predefined area can constitute a Maximum Manageable Area (MMA) and is useful for those units having light fuel types conducive to very rapid fire spread rates. Predefinition of these areas removes the time-lag in defining an MMA after ignition and permits preplanning of the fire area; identification of threats to life, property, resources, and boundaries; and identification on initial actions.

**Fire Management Plan (FMP)** A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

**Fire Management Unit (FMU)** Any land management area definable by objectives, topographic features, access, values to be protected, political boundaries, fuel types, or major fire regimes, etc., that set it apart from management characteristics of an adjacent unit. FMUs are delineated in FMP's. These units may have dominant management objectives and preselected strategies assigned to accomplish these objectives.

**Fire Use** The combination of wildland fire use and prescribed fire application to meet resource objectives.

**Fuel Management** The practice of evaluating, planning, and treating wildland fuel to reduce flammability and to reduce its resistance to control through mechanical, chemical, biological, or manual means, including prescribed fire and wildland fire use in support of land management objectives.

**Fuel Model** A simulated fuel complex for which all fuel descriptors required for the solution of a mathematical fire spread model have been specified.

**Fuel Profile** The mosaic of fuel as it occurs on an area of land over time and space.

**Fuel Treatment** The manipulation of wildland fuel, such as lopping, chipping, crushing, piling and burning, or removal for the purpose of reducing its flammability or resistance to control.

**Hazard** The measure of ease of ignition, fire spread potential, and fire suppression difficulty as influenced by the type, volume, size, distribution, condition, arrangement, and location of the fuel profile.

**Holding Actions** Planned actions required to achieve wildland and prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions. For wildland fires managed for resource benefits, an MMA may not be totally naturally defensible. Specific holding actions are developed to preclude fire from exceeding the MMA. For prescribed fires, these actions are developed to restrict the fire inside the planned burn unit. For suppression actions, holding actions may be implemented to prohibit the fire from crossing containment boundaries. These actions may be implemented as firelines are established to limit the spread of fire.

**Initial Attack** An aggressive suppression action consistent with firefighter and public safety and values to be protected.

**Keetch-Byram Drought Index (KBDI)** This index attempts to measure the amount of precipitation necessary to return the soil to full field capacity. It is a closed system ranging from 0-800 units, and represents a moisture regime from 0-8 inches of water through the

**Management Action Points** (also called "trigger points") Either geographic points on the ground or specific points in time where an escalation or alteration of management actions is warranted. These points are defined and the management actions to be taken are clearly described in an approved Wildland Fire Implementation Plan (WFIP) or Prescribed Fire Plan. Timely implementation of the actions when the fire reaches the action point is generally critical to successful accomplishment of the objectives.



**Maximum Manageable Area (MMA)** The firm limits of management capability to accommodate the social, political, and resource impacts of a wildland fire. Once established as part of an approved plan, the general impact area is fixed and not subject to change. MMAs can be developed as part of the FMP and described as an FMA. They can also be developed as part of the planning and implementation of management actions after a fire has ignited. If they are developed after the ignition, their definition will occur during the Wildland Fire Implementation Plan Stage III process. In the event a fire occurs in a preplanned MMA or FMA and the local unit determines that this MMA is not the best-suited alternative for the present conditions, a new MMA can be developed as part of the Stage III process. Once this occurs, the Stage III MMA becomes the firm limits of the fire and is fixed.

**Mitigation Actions** Those on-the-ground activities that will serve to increase the defensibility of the MMA; check, direct, or delay the spread of fire; and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical nonfire tasks, specific fire applications, and limited suppression actions. These actions will be used to construct firelines, reduce excessive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "blacklines" through controlled burnouts, and to limit fire spread and behavior.

**Most Cost-Efficient Fuel Profile** The fuel profile that minimizes the sum of presuppression cost, including fuel treatment, suppression cost, and net value change.

**Most Efficient Level** The fire management program budget level that results in the minimum cost plus net value change (C+NVC).

**National Fire Management Analysis System (NFMAS)** The fire management analysis process providing input for Forest planning and Forest and Regional fire program development and budgeting

**Natural Fuel** Fuel comprised of combustible wildland vegetation resulting from natural processes and not directly generated or altered by management practices, including fuel that has accumulated as a result of fire exclusion.

**Natural Ignition** An ignition resulting from any natural cause.

**Net Value Change** The sum of the changes in resource values on a land area that results from increases (benefits) and decreased (damages) in resource outputs as a consequence of fire

**Preparedness** Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination. This term replaces presuppression.

**Preparedness Plan** A plan providing for timely recognition of approaching critical fire situations, priority setting, the deployment of forces, and other actions to respond to those situations.

**Prescribed Fire** Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire.

**Prescribed Fire Plan** A plan required for each fire application ignited by managers. The plan is prepared by qualified personnel and approved by the appropriate agency administrator prior to implementation. Each plan follows specific agency direction and includes critical elements described in agency manuals.

**Prescribed Natural Fire (PNF)** This term no longer represents a type of fire and has no further use other than in historical descriptions. This term is replaced by wildland fire use.

**Prescription** Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription

criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

**Risk Assessment** Process used in prescribed fires or wildland fire use planning to determine the level of risk. The risk assessment is documented and used by the approving official to make informed decisions. The risk assessment is completed in the Stage III Long-Term Implementation Action Plan.

**Supplemental Protection** The increased resources assigned to protect activity fuel from wildfire in lieu of fuel treatment.

**Trigger Points** See Management Action Points.

**Wildfire** An unwanted wildland fire.

**Wildland Fire** Any nonstructure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildfires and prescribed natural fires.

**Wildland Fire Implementation Plan (WFIP)** A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits. A full WFIP consists of three stages. Different levels of completion may occur for differing management strategies (i.e., fires managed for resource benefits will have two-three stages of the WFIP completed while some fires that receive a suppression response may only have a portion of Stage I completed.

**Wildland Fire Management Program** The full range of activities and functions necessary for planning, preparedness, emergency rehabilitation of wildland fires, and prescribed fire operations, including nonactivity fuels management to reduce risks to public safety and to restore and sustain ecosystem health.

**Wildland Fire Situation Analysis (WFSA)** A decision making process that evaluates alternative management strategies against selected safety, environmental, social, political, and resource management objectives.

**Wildland Fire Suppression** An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

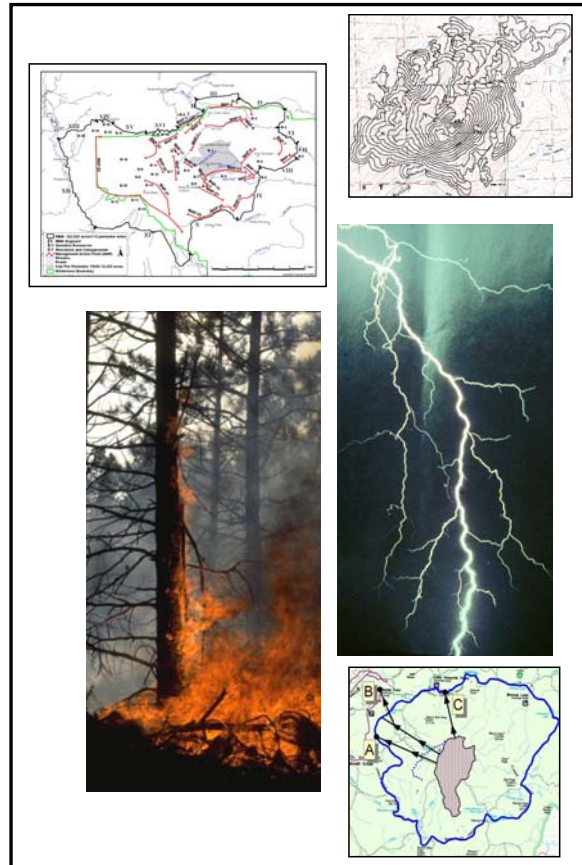
**Wildland Fire Use** The management of naturally ignited wildland fires to accomplish specific predated resource management objectives in predefined geographic areas outlined in FMPs. Operational management is described in the WFIP. Wildland fire use is not to be confused with "fire use" which is a broader term encompassing more than just wildland fires.





# Wildland Fire Use

## Implementation Procedures Reference Guide



February 2005



# Contents

---

---

Contents.....	i
Executive Summary.....	lii
Chapter 1. Introduction .....	1
Chapter 2. Wildland Fire Use Planning and Assessment .....	4
Wildland Fire Implementation Plan.....	4
Minimum Planning and Implementation Qualifications.....	6
Wildland Fire Implementation Plan Completion Timeframes.....	8
Chapter 3. Detailed Description - Wildland Fire Implementation Plan Procedures .....	9
Wildland Fire Implementation Plan - Stage I.....	9
Strategic Fire Size-Up: .....	10
Decision Criteria Checklist .....	10
Alternative Risk Assessment Methods .....	19
Management Actions .....	20
Periodic Fire Assessment.....	21
Wildland Fire Management Plan - Stage II: .....	30
Objectives.....	31
Fire Situation .....	31
Management Actions .....	32
Estimated Costs .....	33
Periodic Fire Assessment.....	33
Wildland Fire Implementation Plan - Stage III: .....	34
Objectives.....	35
Maximum Manageable Area (MMA) Determination.....	35
Weather Conditions and Drought Prognosis .....	36
Long-Term Risk Assessment .....	37
Threats.....	42
Monitoring Actions.....	43
Mitigation Actions .....	43
Resources Needed to Manage the Fire.....	44

Contingency Actions .....	44
Information Plan .....	44
Estimated Costs .....	45
Post-Burn Evaluation .....	45
Signatures and Date .....	45
Periodic Fire Assessment.....	45
Chapter 4: Wildland Fire Use Management Organizations .....	47
Organizational Needs .....	47
References .....	49
Appendix A: .....	50
Wildland Fire Implementation Plan.....	50
Appendix B: .....	lxxxix
Preplanning WFIP Elements.....	lxxxix

**Comment:**

# Executive Summary

---



The following Implementation Procedures Reference Guide (2005 Guide) provides direction, guidance, and assistance in implementing the Federal Wildland Fire Management Policy, specifically associated with the planning and implementation of wildland fire use, for the National Park Service, USDA Forest Service, Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, and the Bureau of Land Management.



Originally, this document was published as the *Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide*



(USDI/USDA1998) (1998 Guide). The 1998 Guide established consistent agreement between agencies regarding specific, detailed implementation of federal fire policy direction. The 2005 Guide represents the first revision to the original and expands and clarifies the process for wildland fire use planning and implementation consistent with the Federal Wildland Management Policy



Review and Update (USDI/USDA/DOE/DOD/USEPA/FEMA/NASF 2001) and the Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (USDA/USDI 2003). The 2005 Guide tiers directly to agency policy and guidance as specifically cited in agency manuals.

The Wildland Fire Use Implementation Procedures Reference Guide, February 2005, describes basic policy framework and clarifies what is and is not applicable within policy. The new Implementation Guide incorporates changes and revisions based on seven years of experience in using the original process.

The purpose of the 2005 Guide is to provide standardized interagency operational level interpretation and implementation of the appropriate management response to all wildland fires, but has the greatest value for potentially long-duration wildland fires. Planning, implementation procedures, management requirements, and formats, including the Wildland Fire Implementation Plan (WFIP), are provided. The WFIP is a progressively developed strategic plan consisting of three stages appropriate for changing levels of fire complexity and management needs.

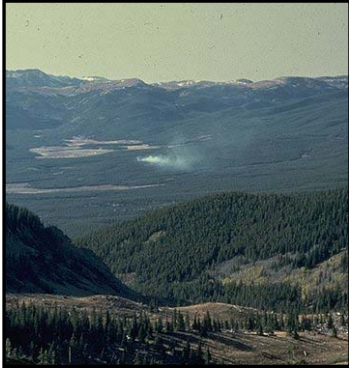
Effective and efficient implementation of wildland fire is the goal of the Federal Fire Policy. Managing wildland fires to accomplish resource objectives, maintain public and firefighter safety, and manage cost expenditures requires significant information archival to document the management decision process for wildland fire use and other wildland fires. This evolving documentation process has been the cornerstone of successful applications of wildland fire use over the past 30 years.





# Chapter 1. Introduction

---



The Departments of Interior and Agriculture, together with Tribal governments, States, and other jurisdictions, have responsibility for protection and management of natural and cultural resources on public and Indian Trust lands in the United States. Managing wildland fires for resource benefit (wildland fire use) is an option available to Federal Agencies who have an approved land use plan and fire management plan that allow for wildland fire use. Opportunities and risks associated with management of wildland fire use and other long-duration fire incidents are increasing in both complexity and geographic extent. Escalating values to be protected associated with intricate land use objectives are compounding fire use management program implementation concerns. Uniform Federal policies and procedures are essential to facilitate greater efficiency and responsiveness in the management of fire to meet resource objectives.

Wildland fire use, based on the Federal Fire Policy direction, is a direct component of wildland fire management. It is a management action equal to wildfire suppression and thus, constitutes an emergency action. It receives consideration, management attention, and management policies equal to wildfire suppression, except for specific differences related to ignition source and management action success (see Operational Clarification Statements below).

This guide provides procedures and requirements to implement the full range of wildland fire use management actions within an appropriate management response framework consistent with the Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (USDI/USDA 2003). Policy statements from the Federal Wildland Fire Policy directly relevant to wildland fire use (WFU) include:

***Safety:*** *Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment.*

***Fire Management and Ecosystem Sustainability:*** *The full range of fire management activities will be used to achieve ecosystem sustainability including its interrelated ecological, economic, and social components.*

***Response to Wildland Fire:*** *Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fires is based on ecological, social and legal consequences of the fire.*

***Use of Wildland Fire:*** *Wildland fire will be used to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role. Use of fire will be based on approved Fire Management Plans and will follow specific prescriptions contained in operational plans.*

**Science:** *Fire management plans and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociological factors. Information needed to support fire management will be developed through an integrated interagency fire science program.*

**Interagency Cooperation:** *Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.*

**Communication and Education:** *Agencies will enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education programs.*

Operational clarification statements from the Federal Fire Policy directly relevant to wildland fire use include:

*"Only one management objective will be applied to a wildland fire. Wildland fires will either be managed for resource benefits or suppressed. A wildland fire cannot be managed for both objectives concurrently. If two wildland fires converge, they will be managed as a single wildland fire."*

*"Human caused wildland fires will be suppressed in every instance and will not be managed for resource benefits."*

*"Once a wildland fire has been managed for suppression objectives, it may never be managed for resource benefit objectives."*

*"Wildland fire use is the result of a natural event. The Land/Resource Management Plan, or the Fire Management Plan, will identify areas where the strategy of wildland fire use is suitable. The Wildland Fire Implementation Plan (WFIP) is the tool that examines the available response strategies to determine if a fire is being considered for wildland fire use."*

*"When a prescribed fire or a fire designated for wildland fire use is no longer achieving the intended resource management objectives and contingency or mitigation actions have failed, the fire will be declared a wildfire. Once a wildfire, it cannot be returned to a prescribed fire or wildland fire use status."*

Clarifying terms and definitions from the Federal Fire Policy having importance to wildland fire use include:

**Wildland Fire:** *Any non-structure fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use and prescribed fire.*

**Wildland Fire Use:** *The application of the appropriate management response to naturally-ignited wildland fires to accomplish specific resource management objectives in predefined designated areas outlined in Fire Management Plans.*

Other Policy clarifying briefing papers include:

**Three Kinds of Fire:** *Wildfire, wildland fire, and prescribed fire.* (National Fire and Aviation Executive Board 2005a).

**Use of Wildland Fire:** *Either wildland fire use or prescribed fire applications to meet resource objectives* (National Fire and Aviation Executive Board 2005b).

While unique agency missions may cause wildland fire use management operational differences, it is expected that these differences will be minor and will not limit cross-jurisdictional planning and implementation. The interagency wildland fire use planning and implementation procedures described in this guide will enhance effective and efficient operations across administrative boundaries, facilitate short- to long-duration management, reduce problems or suspensions of operations during personnel transfer of commands, improve agency ability to meet other challenges and opportunities when managing wildland fires for resource benefit, and fulfill the standardization of procedures and policies direction from the Federal Fire Policy.

The reference guide is structured to provide a management summary for each section (in red boxes), then more detailed descriptions of processes and contains reproducible forms in Appendix A.

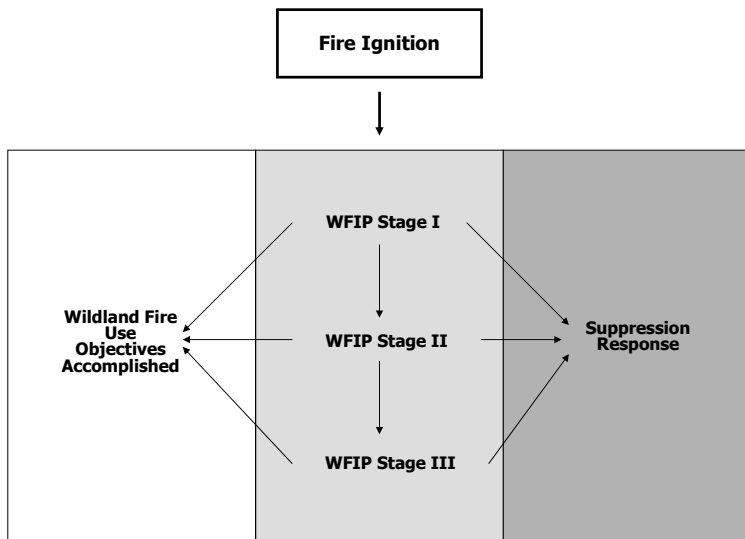
# Chapter 2. Wildland Fire Use Planning and Assessment

## Wildland Fire Implementation Plan

Specific planning and documentation requirements exist for management of wildland fires where resource benefits are a primary objective. The full planning process used for Wildland Fire use events is uniquely different than the processes used for management of unwanted wildfires. Figure 1 illustrates the basic Wildland Fire Use planning process.

Deleted: <sp>  
 Inserted: <sp>

A standard Wildland Fire Implementation Plan (WFIP) has been developed. The complete WFIP consists of three stages and is prepared progressively. Each individual stage constitutes a stand alone implementation plan and specific forms and formats are available for each stage. Progression from one stage to the next is dependent upon fire activity, potential duration, and relative risk as it relates to the incident. As each progressive stage is prepared, it is attached to the previous stage and becomes the guiding document until management of the fire accomplishes resource objectives or progression to a higher stage occurs.



Since each stage can be completed individually and used as a stand-alone plan, it is possible that an individual fire will be managed under only Stage I for its duration. Some fires will progress to Stage II and some will progress to Stage III. Thus, the overall objectives for managing individual fires can be accomplished through successful implementation of any or all of the stages, as illustrated by the left portion of Figure 1.

**Figure 1.** Generalized flow of Wildland Fire Implementation Plan showing progression of stages and points of movement to a suppression response.

WFIP Stage I documents the fire situation, Agency Administrator decision, management actions, and sets the initial periodic assessment schedule. This Stage is the initial stage of the planning process. Given suitable circumstances, it can be used to manage a fire with low potential for spread and negative impacts. Components of the WFIP Stage I include:

- Strategic Fire Size-Up (documents fire situation, including fire location and cause). A Strategic Fire Size-Up is completed for all wildland fires and provides information necessary to decide whether to implement a wildland fire use or a suppression response. All wildland fires naturally caused and in a fire management unit approved for wildland fire use become wildland fire use candidates. For fires not meeting these criteria, the WFIP planning stops at this point and a suppression action is initiated. For wildland fires meeting these criteria (WFU candidate), the planning continues into the Decision Criteria Checklist.
- Decision Criteria Checklist (documents the decision to manage fire for resource benefits or initiate a suppression action)
- Management Actions (identifies management actions)
- Periodic Fire Assessment (set assessment frequency, confirms decision to continue with WFU, identifies planning stage needs and implementation qualification levels). A Periodic Fire Assessment is completed as part of each Stage on a schedule determined by Managers. Completing this step in Stage I provides direction to move to Stage II, remain with Stage I, or initiate a suppression response.

**Deleted:** . A WFU event can be managed at any of the Stages in the process if complexity and risk remain low.

**Inserted:** A WFU event can be managed at any of the Stages in the process if complexity and risk remain low.

The Strategic Fire Size-Up, Decision Criteria Checklist, and Periodic Fire Assessment are points in the WFIP Stage I where a suppression response could be indicated (Figure 1) although the Agency Administrator can decide to suppress a fire at any time.

WFIP Stage II defines management actions required in response to a changing fire situation as indicated by monitoring information and the Periodic Fire Assessment completed as part of Stage I. Stage II is used to manage larger, more active fires with greater potential for geographic extent than in Stage I. Under suitable circumstances and fire situation, this stage could represent the end point in WFIP planning and be used to manage a fire through its duration. Components of the WFIP Stage II include:

- Objectives
- Fire Situation
  - Current and predicted fire behavior
  - Current and predicted weather
  - Threats
  - Safety considerations
  - Environmental concerns
  - External concerns
- Management actions (include description of action and expected duration)
- Estimated costs
- Periodic fire assessment. Completing this step in Stage II provides direction to move to Stage III, remain with Stage II, or initiate a suppression response.

WFIP Stage III defines management actions required in response to an escalating fire situation, potential long duration, and increased need for management activity, as indicated by the Periodic Fire Assessment completed as part of Stage II. It addresses management objectives and constraints in detail, describes the maximum area that the fire may be managed within (Maximum Manageable Area), identifies foreseeable threats and concerns, provides a quantitative long-term risk assessment, identifies management actions to mitigate or eliminate threats, provides cost estimates, and documents a periodic assessment of the situation. This stage constitutes a substantial planning effort but some of the information used in this stage can be pre-planned or completed prior to fire ignition if the administrative unit desires to do so. Such pre-planning is strongly encouraged. Additional information on pre-planning is provided in Appendix B.

Components of the WFIP Stage III include:

- Objectives and Risk Assessment Considerations
  - Natural and Cultural resource objectives
  - Management Constraints
- Maximum Manageable Area (MMA) Definition and Maps
- Weather Conditions and Drought Prognosis
- Long-Term Risk Assessment (describe techniques and outputs, include maps as appropriate)
- Threats
  - MMA
  - Public Use and Firefighter Safety
  - Smoke dispersion and effects
  - Other
- Monitoring Actions (actions, frequency, and duration)
- Mitigation Actions (describe management actions, management action points that initiate these actions, and key to map if necessary)
- Resources needed to manage the fire
- Contingency Actions (describe actions necessary when mitigation actions are unsuccessful)
- Information Plan
- Estimated costs
- Post-burn evaluation
- Signatures and Date
- Periodic Fire Assessment

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

## Minimum Planning and Implementation Qualifications

The following table (Table 1) shows the minimum interagency qualification requirements for planning and implementation at each stage of the WFIP process.

**Table 1.** WFIP planning and implementation minimum qualifications.

WFIP Stage	Minimum Planning Qualifications	Minimum Implementation Qualifications (Use Fire Use Manager Decision Chart to determine recommended position)
WFIP Stage I	Unit Duty Officer	Incident Commander Type 4 (ICT4)
WFIP Stage II	Fire Use Manager Type 2 (FUM2)	Fire Use Manager Type 2 (FUM2)

Deleted: ¶  
¶  
¶

Inserted: ¶  
¶  
¶

**Comment:** If we even suggest an agency can have their own level qualifications than we are not being consistent with the Implementation Strategy to do things the same, and open the door for someone to make it different. I would dump this statement.

**Deleted:** Agencies or individual units may choose to require higher qualification levels.

WFIP Stage III	Fire Use Manager Type 2 (FUM2)	Fire Use Manager Type 2 (FUM2)
----------------	-----------------------------------	-----------------------------------

The determination of the appropriate level of implementation qualifications is made through the Wildland Fire Use Management Assessment, Part 2: Fire Use Manager Decision Chart (See Wildland Fire Management Assessment, WFIP Stage I, Periodic Fire Assessment). Duty Officer qualifications are defined in local unit operating plans.

# Wildland Fire Implementation Plan Completion Timeframes

Specific completion timeframes have been established for each stage of the WFIP. The following table shows maximum completion timeframes for WFU planning tasks.

**Table 2.** WFIP completion timeframes.

WFIP Stage	Maximum Completion Timeframe
WFIP Stage I	8 hours after confirmed fire detection and Strategic Fire Size-Up
WFIP Stage II	48 hours after need indicated by Planning Needs Assessment
WFIP Stage III	7 days after need indicated by Planning Needs Assessment
Periodic Fire Assessment	As part of all stages and on assigned frequency thereafter

**Deleted:** ¶  
¶

**Inserted:** ¶  
¶

**Comment:** If we even suggest an agency can have their own level qualifications than we are not being consistent with the Implementation Strategy to do things the same, and open the door for someone to make it different. I would dump this statement.

**Deleted:** Agencies or individual units may choose to require higher qualification levels.



# Chapter 3. Detailed Description - Wildland Fire Implementation Plan Procedures

## Wildland Fire Implementation Plan - Stage I

Formatted: Bullets and Numbering

<b>Use:</b>	Documents the fire situation and Agency Administrator decision, describes management actions, and sets the initial periodic assessment schedule as a primary stage of the planning process.
<b>Information Source:</b>	Fire size-up information, current fire weather and fuel moisture conditions, local information, Agency Administrator input, and site-specific information from the <a href="#">Fire Implementation Plan (FIP)</a> .
<b>Completion Time:</b>	The Strategic Fire Size-Up is completed as soon as aerial or on-the-ground resources provide a confirmation of the fire's existence and the required fire size-up information.  All remaining Stage I components completed within 8 hours of completion of Strategic Fire Size-Up.

The WFIP Stage I establishes the information base for managing the fire. It documents the current and predicted situation, documents all appropriate administrative information, and aids managers by providing them with information to make an initial decision to continue management of the fire for resource benefits or to take suppression action. It also allows the manager to select and document a recommended response action. Stage I consists of four specific components: Strategic Fire Size-Up, Decision Criteria Checklist, Management Actions, and Periodic Fire Assessment (an element of all stages). The information shown in the box to the right illustrates all WFIP Stage I elements. The four Stage I components are described in detail in the following sections. Completion of this stage is determined by the Periodic Fire Assessment indicating Stage II is needed, the Agency Administrator directing it to be completed, or the objectives being accomplished with no further need to advance through planning stages. A sample plan is included in Appendix A and an electronic software package for WFIP preparation is available.

- WFIP Stage I Content**
- Strategic Fire Size-Up
    - Fire name
    - Fire number
    - Administrative unit(s)
    - Start date/time
    - Discovery date/time
    - Current size
    - Fuel model(s)
    - Current weather
    - Observed fire behavior
    - Location
      - FMU
      - Cause
  - Decision Criteria Checklist
  - Management Actions
    - Forecasted weather
    - Forecasted fire behavior
    - Hazards and Safety concerns
    - Management Actions
    - Availability of resources
  - Periodic Fire Assessment

Formatted: Bulleted + Level: 1 + Aligned at: 0" + Tab after: 0.25" + Indent at: 0.25"

Formatted: Font: (Default)Tahoma

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: 0", List tab + Not at 0.5"

Deleted: ¶  
Fire Management Unit (FMU)

Deleted: Current

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: 0", List tab + Not at 0.5"

Formatted: Bulleted + Level: 1 + Aligned at: 0" + Tab after: 0.25" + Indent at: 0.25"

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: Not at 0"

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: Not at 0"

Formatted: Bulleted + Level: 1 + Aligned at: 0" + Tab after: 0.25" + Indent at: 0.25"

## Strategic Fire Size-Up:

All reported wildland fires receive a size-up. The Strategic Fire Size-Up consists of a standard information set (refer to Incident Response Pocket Guide or Interagency Standards for Fire and Fire Aviation Operations or locally developed operating guidelines and forms) needed for the Duty Officer to determine if the fire meets the requirements for WFU management. The Duty Officer is responsible within his/her delegated authority for determining if the fire meets minimum WFU requirements and keeping the Agency Administrator informed of the situation. Two key pieces of information collected for the Strategic Fire Size-Up will help the Duty Officer make this determination. These are fire location in regard to the Fire Management Plan's Fire Management Unit and the cause of the fire. Location of the fire in an FMU not approved for wildland fire use or being human-caused is reason to initiate a suppression response. If the fire is located in an FMU approved for wildland fire use and naturally ignited, it becomes a WFU candidate and the planning process continues into the Decision Criteria Checklist. This determination is noted at the bottom of the Strategic Fire Size-Up form (Figure 2 shows that portion of the Strategic Fire Size-Up). The appropriate information is circled and the person preparing this form initials and dates after completion.

<b>FMU</b> (circle appropriate FMU situation)	WFU Approved		WFU not Approved	
	Natural Ignition		Human Caused Ignition	
<b>Cause</b> (circle fire cause)	<b>Wildland Fire Use Candidate</b> – Continue with Decision Criteria Checklist	<b>Suppression</b>	<b>Initials</b>	<b>Date/Time</b>
<b>Suitability for Wildland Fire Use</b> (circle situation, initials of person preparing, date/time)				

**Figure 2.** Location, cause, and WFU suitability portions of Strategic Fire Size-Up.

## Decision Criteria Checklist

The Decision Criteria Checklist consists of three sections: Decision Elements, Recommended Response Action, and Justification for Suppression Response (Figure 3). The Decision Elements are five questions the Agency Administrator must answer. This process allows the Agency Administrator to gain better situational awareness and helps evaluate if the current wildland fire should be managed under a WFU response. These questions assess threats from the fire, potential effects of the fire, risk from the fire, effects of other fire activity on management capability, and allow the Agency Administrator to consider external or other unanticipated issues.

To complete the checklist, the Agency Administrator answers the decision elements, based on input from his/her staff, and determines if the fire should receive a WFU management response or a suppression response. **A "Yes" response to any of the five elements indicates that management should take a suppression response. All "No" answers to the decision elements indicate that the fire is a viable candidate to be managed as a WFU.**

### Detailed Explanations of Decision Elements:

- The first decision element involves the relative threats to life and property. If known threats cannot be adequately mitigated (i.e., "yes" answer), managing the fire as a WFU has potential concerns due to fire location, serious threats to firefighter and public safety, and potentially significant consequences.
- The second decision element involves objectives and resource conditions for wildland fire management as stated in the FMP. Potential outcomes and desired effects are closely correlated with burning conditions and fire behavior. Objectives and constraints include air quality and effects on natural and cultural resources, as applicable. References for objectives and constraints include the unit FMP, unit land management plan, and Agency Administrator input.
- The third decision element involves a relative assessment of the risk for the fire. Since the decision to suppress or manage the fire is time constrained (8 hour decision space), it may not be possible to complete a long-term risk assessment. In lieu of the quantitative long-term risk assessment, a qualitative assessment process has been developed to provide the Agency Administrator with a quick but comprehensive assessment of the relative risk of the fire. Input information for this decision element is acquired by completing the Wildland Fire Relative Risk Assessment (Figure 4). This assessment must be completed to support the Decision Criteria Checklist in Stage I, and is reevaluated during each Periodic Fire Assessment. Neither a high nor low relative risk rating necessarily predispose a

"yes" or "no" answer on the Decision Criteria Checklist. The Agency Administrator must still decide what level of risk is acceptable. A description of the Wildland Fire Relative Risk Assessment is provided in the following section (**Wildland Fire Relative Risk Assessment**).

- The fourth decision element pertains to other local and regional fire activity, commitments of unit and cooperator

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

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

Recommended Response Action (check one)	Signature/Position	Date
Suppression Response		
Wildland Fire Use Response		

Justification for Suppression Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Deleted:** done

**Inserted:** done

**Deleted:** (see Section ??? for detailed description of risk assessment). Use the relative risk as input information for the Decision Criteria Checklist.

**Deleted:** They provide an indication, but

**Deleted:** t

resources, specific unit FMP limitations on fire numbers, and availability to fill special skill positions from local resources for this fire. If current fire activity precludes the ability to manage fire with adequate resources and skill mixtures, then the response to this element will be "Yes" and a suppression response is indicated.

- The final decision element allows Agency Administrator discretion in the event there are other issues which were unknown to fire staff and must be considered as part of the decision to manage the fire for resource benefits. Agency Administrators will document other issues that precluded management of the fire for resource benefits.

Once the Decision Criteria Checklist is complete, the Agency Administrator decides whether to initiate actions to manage the fire as a WFU or manage it under a suppression response. At the bottom of the Decision Criteria Checklist is a check box for the recommended response action followed by the Agency Administrator's (or other delegated individual's) signature and date. If a suppression response is selected, the Agency Administrator

must include a justification for this selection at the bottom of the page

**Figure 3.** Decision Criteria Checklist (a standard size reproducible copy of the checklist is included in

### **Wildland Fire Relative Risk Assessment**

The Federal Fire Policy requires that sound risk management be a foundation for all fire management activities. Recent reviews and audits have also stressed the need for risk management. In fact, risk management is rapidly becoming a cornerstone phrase associated with fire management. A report by the National Academy of Public Administration (NAPA) (2001), "stresses the role of risk reduction in wildlands as a critical mitigation approach to improve community protection. The Government Accountability Office (USGAO 2004) completed a report on risk assessment associated with the fuel treatment program. This report also stresses the importance of risk assessment in fire and fuels management.

Using fire to meet resource objectives contains an inherent level of risk given that we are dealing with a number of unknowns and uncertainty in what the future will bring. The relative risk rating is intended to characterize the general magnitude of risks associated with implementing a wildland fire use incident at a snapshot in time. It is an attempt to qualify the level of uncertainty regarding the eventual outcomes of the fire in relation to the management objectives and other mandates. The relative risk rating is a direct input into the decision criteria checklist, wildland fire use management assessment, and periodic fire assessment.

The Wildland Fire Relative Risk Assessment provides the Agency Administrator with a quick but comprehensive assessment of the relative risk of the fire. This is a qualitative process that can be completed in less time than a quantitative long-term risk assessment. The relative risk rating produced from this assessment is a decision

support aid for the Agency Administrator in answering the Decision Criteria Checklist elements and during the Periodic Fire Assessment.

The relative risk assessment chart uses three risk components: values, hazard, and probability. Each of these components is assessed in an independent step. Then, the three outputs are evaluated in a final step that provides the relative risk for the fire. Each risk component is defined by three variables. One variable is located on the right and one on the left side of the box and the third variable is defined by three interior lines extending from top to bottom (Figure 4).

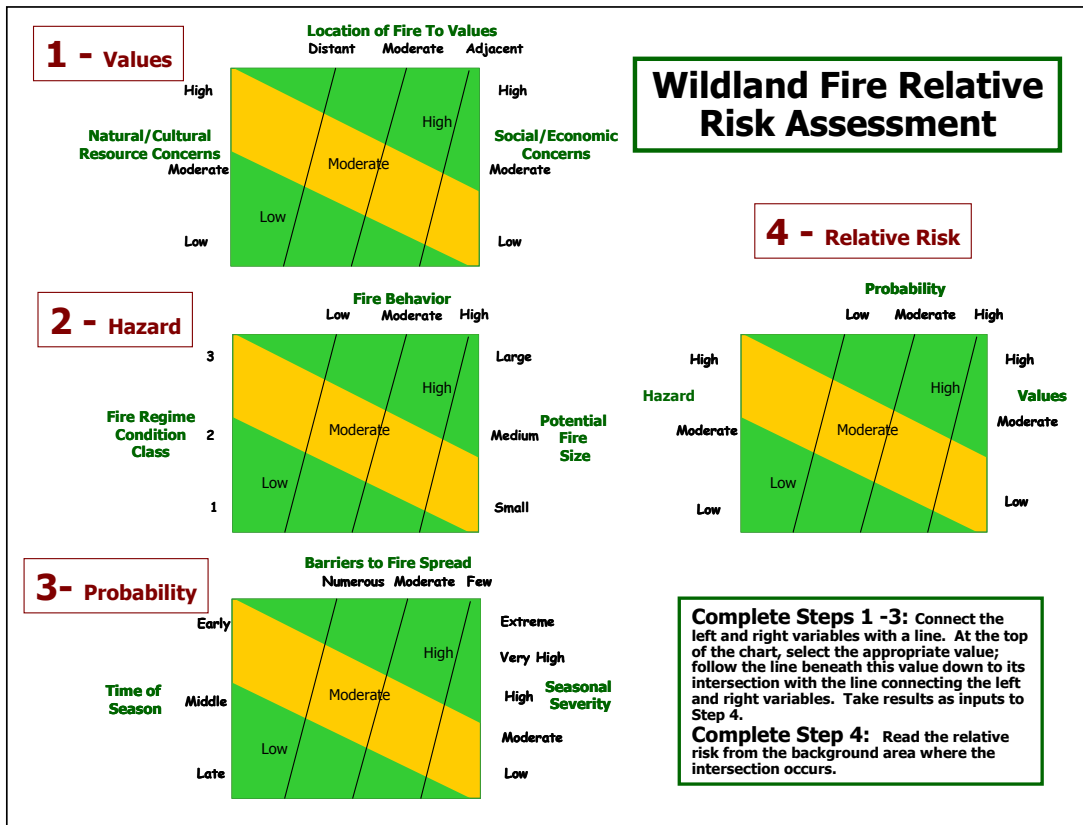
Deleted: socio-political

**Values:** Values are those ecologic, social, and economic resources that could be lost or damaged because of a fire. Ecologic values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecologic functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities.

**Hazard:** The hazard in wildland fire is made up of the conditions under which it occurs and exists, its ability to spread and circulate, the intensity and severity it may present, and its spatial extent.

**Probability:** Probability refers to the likelihood of a fire becoming an active event with potential to adversely affect values.

The Wildland Fire Relative Risk Assessment Chart is shown in Figure 4. Four steps are necessary to complete the risk assessment. Step-by-step instructions for completing the Wildland Fire Relative Risk Assessment are included in Appendix A. While all four steps are shown in this figure, each step is available individually in a larger format figure in Appendix A.



**Figure 4.** Wildland Fire Relative Risk Assessment.

Initial information to consider in developing the rating for the individual element is provided in the following section and after each of the individual charts in the Appendix (Appendix A). This descriptive list is not all inclusive and items on the list can be expected to vary by place and time. Users are expected to exercise their judgment in determining the ratings; information is intended to provide both guidance in completion and flexibility in determining exactly what the descriptions mean. Local information can and should be amended to the lists to better reflect site-specific situations.

**PART 1: VALUE ASSESSMENT:** Values are those ecologic, social, and economic effects that could be lost or damaged because of a fire. Ecologic values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecologic functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities. This assessment area allows opportunity for the local agency administrator to identify particular local concerns. These concerns may be identified in the fire management plan or other planning documents.

Formatted: Font: (Default) Tahoma, 9 pt

Formatted: Font: (Default) Tahoma, 9 pt

**Natural/Cultural Resource Concerns** - key resources potentially affected by the fire. Examples include, but are not limited to habitat or populations of threatened, endangered, or sensitive species, water quality, erosion concerns, and invasive species.

Low	Moderate	High
Resource concerns are few and generally do not conflict with management of the fire. Mitigation measures are effective.	Significant resource concerns exist, but there is little conflict with management of the fire. Mitigation measures are generally effective.	Multiple resource concerns exist, some of which may conflict with management of the fire. The effectiveness of needed mitigation measures is not well established.

**Social/Economic Concerns** - the risk of the fire, or effects of the fire, impacting the social or economic concerns of an individual, business, community or other stakeholder involved with or affected by the fire. Social concerns may include degree of support for the Wildland Fire Use program or resulting fire effects, potential consequences to other fire management jurisdictions, impacts to tribal subsistence or gathering of natural resources, air quality regulatory requirements and public tolerance of smoke. Economic concerns may include potential financial impacts to property, business, or infrastructure. Infrastructure impacts may be costs to repair or replace sediment catchments, wildlife guzzlers, corrals, roads, culverts, power lines, domestic water supply intakes, and similar items.

Low	Moderate	High
Local support for wildland fire use is high. The fire should have little or no impact on subsistence or Tribal activities involving treaty rights. The fire is expected to remain within a single jurisdiction or agreements are in place to allow the fire to move across several jurisdictions. Media coverage is favorable. Few structures or business ventures are potentially affected by the fire. There are few impacts to recreation and tourism.	Local support of wildland fire use is clearly divided between supporters and opponents. The fire will have some impacts on subsistence or Tribal activities involving treaty rights. The fire is expected to involve more than one jurisdiction, cooperator, or special interest group and agreements need to be developed. Media coverage tends to be a mix of favorable and unfavorable views. Some structures may be threatened by the fire or some business ventures may be affected by the fire.	Local support for wildland fire use is low. The fire will have significant impacts on subsistence activities or Tribal activities involving treaty rights. Smoke impacts may become a concern for higher level air quality regulatory agencies. The fire is expected to involve several jurisdictions, cooperators, and special interest groups and agreements requiring significant negotiation need to be developed. Media coverage tends to be unfavorable. Many structures or private properties could be threatened.

**Location of Fire to Values**

Distant	Moderate	Adjacent
Fire location is not proximate to values to be protected or fire is located where it is	Fire location is moderately proximate to values. Location is such that, based on historical	Fire location is in close proximity to values. Without mitigation actions, fire will be expected to

highly unlikely that it would reach the values.

data, fire could potentially reach the values but will take multiple burning periods and sustained fire activity to reach the values.

reach the values.

**PART 2: HAZARD ASSESSMENT:** The hazard in wildland fire is made up of the conditions under which it occurs and exists, its ability to spread and circulate, the intensity and severity it may present, and its spatial extent.

**Current Fire Behavior** – the current fire behavior or that most recently observed. Changing fire behavior is addressed through repeated completion of the Periodic Fire Assessment.

Low	Moderate	High
Short duration flaming front with occasional torching. Fuels are uniform and fire behavior can be easily predicted and tactics implemented.	Short range spotting occurring. Moderate rates of spread are expected with mainly surface fire and torching. Fuels and terrain are varied but don't pose significant problems in holding actions.	Long range spotting > ¼ mile. Extreme rates of spread, and crown fire activity are possible. Fuels, elevation, and topography vary throughout the fire area creating high resistance to control.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.... since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like "conducive weather" and "alignment" in the text. This would kind of get away from the "attack" terminology also which I don't particularly like here.

**Fire Regime Condition Class** – a measure of ecological functions at risk based on changes in vegetation.

1	2	3
Vegetative composition and structure are resilient and key components are at low risk of loss. Few, if any, fire return intervals have been missed and fuel complexes are similar to historic levels.	Both the composition and structure of vegetation has shifted towards conditions that are less resilient and more at risk of loss. Some fire return intervals have been missed, stand structure and composition, and fuel complexes have been altered and present potential for fires of severity and intensity levels in excess of historic levels.	The highly altered composition and structure of the vegetation predisposes the landscape to fire effects well outside the range of historic variability, potentially producing changed fire environments never before measured.

**Potential fire size** - the potential fire size by the end of the season in comparison to historical fire occurrence.

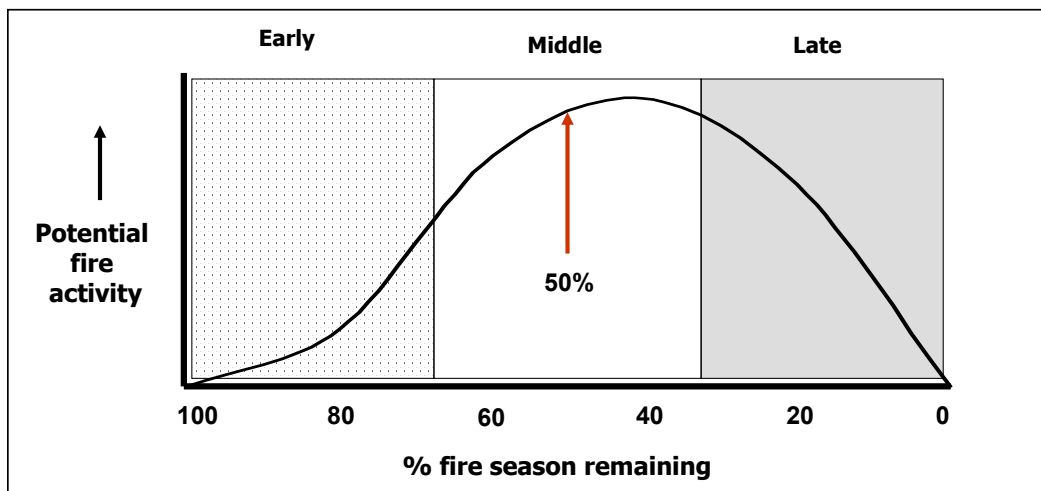
Small	Medium	Large
Fire size is expected to be small for the dominant fuel type involved	Fire size is expected to be in the mid-range for the dominant fuel type involved	Fire size is expected to be large for the dominant fuel type involved.



**PART 3: PROBABILITY ASSESSMENT:** Probability refers to the likelihood of a fire becoming an active event having potential to adversely affect values.

**Time of Season** - the current time in relation to the historical fire season. The chart below the guidelines reinforces the importance of time of season. During the early part of the fire season, the peak of burning activity is still to come, thus the fire could present substantial variation in behavior and activity. In the middle of the season, the peak of burning activity may or may not have occurred while in the late part of the season, the peak of fire activity generally has occurred and managers can reasonably expect diminishing fire activity and behavior as time progresses. As the amount of fire season remaining decreases or as the time of season progresses from early to late, management concerns and issues associated with potential fire activity decrease.

Early	Middle	Late
The current date is in the early portion of the historic fire season, at least 2/3 of the established fire season remains and the peak of burning activity is still to come.	The current date is in the middle of the historic fire season, at least 1/3 of that period has passed and no less than 1/3 remains. The peak burning activity period either has occurred, is occurring now, or will occur very soon.	The current date is in the latter part of the historic fire season. At least 2/3 of the historic period has passed, the peak burning activity period has occurred, and the probability of a season-ending or fire-ending event is increasing quickly.



**Seasonal Severity** - a measure of the potential burning conditions as expressed by factors such as ERC, drought status, live fuel moistures, dead fuels moistures, soil moisture, stream discharge, and similar types of measures.

**Comment:** Changes made to match Risk Charts

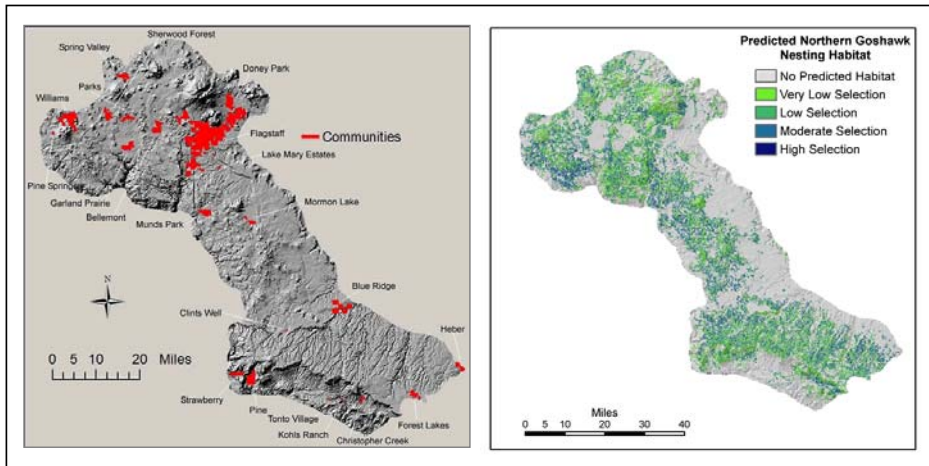
Low	High	Extreme
Measures of fire danger are below to somewhat above seasonal averages. Drought status is within seasonal norms with no long-term drought present	Measures of fire danger are well above seasonal averages but not setting new records. The area is in short-term drought (1-2 years of drought) but not considered to be in long-term drought.	Measures of fire danger are setting new records. The area is considered to be in long-term drought (3 or more years of drought).

**Barriers to Fire Spread** – a measure of the natural defensibility of the fire location and an indication of degree of potential mitigation actions needed.

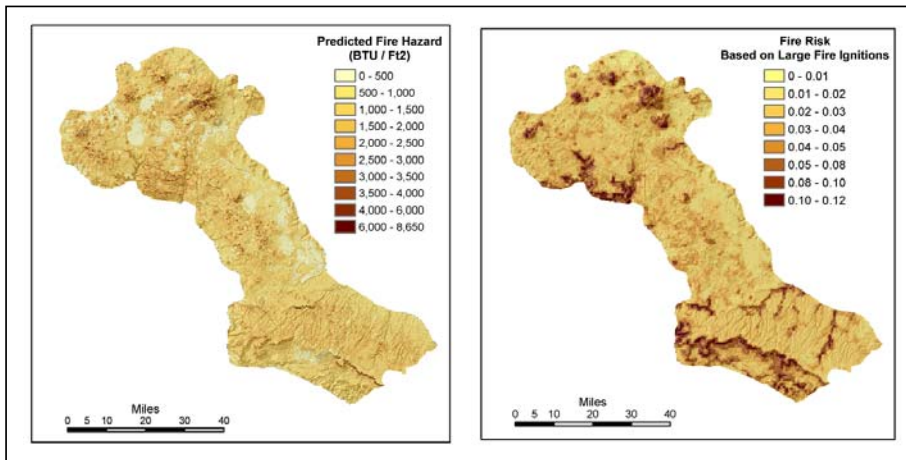
<b>Numerous</b>	<b>Moderate</b>	<b>Few</b>
The location of the fire and presence of natural barriers and fuel breaks limit the horizontal fuel continuity, minimal mitigation actions on-the-ground will be needed.	The location of the fire and presence of some natural barriers and fuel breaks limit the horizontal fuel continuity on some, but not all fire flanks, some mitigation actions on-the-ground will be needed to protect threats to boundaries and sensitive areas.	The location of the fire and presence of only limited natural barriers and fuel breaks will permit fire spread across continuous fuels. Mitigation actions on-the-ground will be needed but are expected to be effective.

## Alternative Risk Assessment Methods

If pre-planning or ongoing planning efforts lead to the development of additional mechanisms for assessing risk, these outputs can be utilized during the relative risk assessment process. Some planning analyses provide indications of values, hazards, and probability that may be used in lieu of completing Steps 1, 2, and 3 of the Relative Risk Assessment. **Step 4, determination of the risk, must be completed, regardless of how the values, hazard, and probability are determined.** Figures 5 and 6 show some examples of preplanning products that could be used for Steps 1, 2, and 3.



**Figure 5.** Geographic information system mapping outputs showing community locations and wildlife species concern areas (courtesy of ForestERA, Northern Arizona University, Flagstaff, AZ).



**Figure 6.** Geographic information system mapping outputs showing predicted fire hazard and fire risk (courtesy of ForestERA, Northern Arizona University, Flagstaff, AZ).

Mapping products like those illustrated in Figure 5 provide locations of communities, wildland-urban interface, infrastructure, natural resource concerns, etc. These maps can be used in conjunction with Fire Management Units to assess risk from fire to these values and can be directly used in the relative risk chart as levels of values for Step 1 or Step 4.

In Figure 6, fire hazard can be used to evaluate the hazard portion of the relative risk and fire risk could be an indicator of probability. These data can be used in conjunction with Fire Management Unit information to assess the hazard and probability and can be directly used in the relative risk chart as levels of hazard and probability in Step 2, 3, and/or 4.

There are numerous other methods that can be used to help evaluate the relative risk. If an alternative method is used to derive the value, hazard, and probability, that method must be documented on the relative risk rating charts.

### **Management Actions**

Deleted: 7

The Management Actions describe activities necessary to manage the fire until the Periodic Fire Assessment indicates a change in WFIP planning stage and activity is required or until objectives are achieved. Management Actions will include monitoring and other actions as appropriate. Monitoring actions are important components of Stage I Management Actions. Monitoring Actions are necessary to track fire movement, fire activity, fire effects, and to provide information vital to completing the Wildland Fire Use Management Assessment. Management Actions should be designed to safely achieve the wildland fire use objectives as detailed in the Fire Management Plan, and be based upon the fire situation and forecasted weather and fire behavior.

Deleted: 1

## Periodic Fire Assessment

<b>Use:</b>	<p><b>evaluate and document:</b></p> <ul style="list-style-type: none"> <li>▪ <b>the capability to manage the fire to meet resource benefits,</b></li> <li>▪ <b>relative risk,</b></li> <li>▪ <b>management organization, operational, and personnel qualification needs; and</b></li> <li>▪ <b>the WFIP planning level required to meet identified needs.</b></li> </ul> <p>Periodic Fire Assessment is completed on a set schedule in conjunction with WFIP Stages.</p>
<b>Information Source:</b>	Monitoring information, risk assessment results, current fire activity, fire intensity, fire size, fire danger indicators, time period of fire season, fire behavior forecasts, and Agency Administrator and staff input.
<b>Estimated Completion Time:</b>	four

For each wildland fire use action, the Agency Administrator (or delegated individual) is required to initially affirm and periodically reaffirm the capability to manage the fire as a WFU event. This process is intended to document and ensure management accountability throughout the duration of the wildland fire use. The Periodic Fire Assessment process:

<p><b>Periodic Fire Assessment:</b></p> <ul style="list-style-type: none"> <li>❑ Decision Criteria Checklist</li> <li>❑ Wildland Fire Relative Risk Assessment</li> <li>❑ Wildland Fire Use Management Assessment</li> </ul> <p>Part 1: Planning Needs</p>
--

- affirms continued management of the fire to meet resource objectives or provides rationale for conversion to a suppression response.
- confirms and documents the decision to establish, remain at, or move up, to the next Stage of planning.
- validates the minimum planning and implementation qualifications.

The Periodic Fire Assessment accomplishes the above-stated purposes by:

- completing a Decision Criteria Checklist (either by reaffirming the Decision Criteria Checklist completed in the previous stage or through completion of a new one),
- assessing the level of risk the fire presents using the Wildland Fire Relative Risk Assessment Process (either by reaffirming the Wildland Fire Risk Assessment completed in the previous stage or through completion of a new one),

- assessing the planning needs of the unit,
- assessing the minimum planning and implementation qualifications for each stage of the WFIP,
- completing a signature table that affirms the Agency Administrator's concurrence to manage the fire for resource benefits and at a particular Stage.

The initial Periodic Fire Assessment is completed as part of the WFIP Stage I. It is then re-done on the recurring timeframe set by the Assessment Frequency.

### **Decision Criteria Checklist**

The Decision Criteria Checklist completed in Stage I or during the most recent Periodic Fire Assessment is reviewed for continued validity. The validity of the Checklist is noted on the Periodic Fire Assessment Signature Page. If the Decision Criteria Checklist is no longer valid, management of the fire for resource benefits can no longer continue. See WFIP Stage I Decision Criteria Checklist procedures for a description of the Decision Criteria Checklist and an example form.

### **Wildland Fire Relative Risk Assessment**

The Wildland Fire Relative Risk Assessment, completed during Stage I or during the most recent Periodic Fire Assessment, is reviewed and updated to remain current and ensure validity. **It is important that this assessment be reviewed and updated as conditions change over time (this review and update is required in the Periodic Fire Assessment).** See WFIP Stage I Wildland Fire Relative Risk Assessment procedures for a description of the Wildland Fire Relative Risk Assessment and example forms.

### **Wildland Fire Use Management Assessment**

The Wildland Fire Use Management Assessment consists of two parts:

- Part 1: Planning Needs Assessment Chart,
- Part 2: Fire Use Manager Decision Chart

This section is completed to determine if the level of planning and management capability and qualifications are commensurate with the fire activity and management capability.

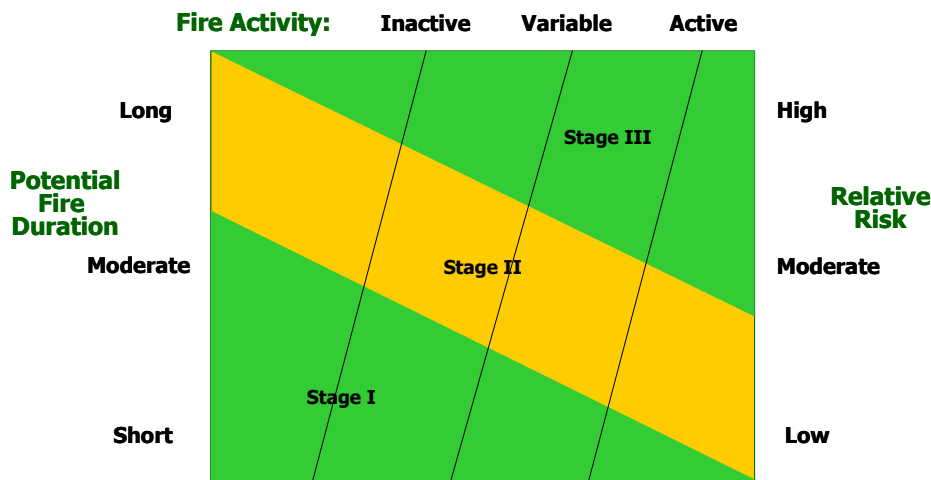
#### **Part 1: Planning Needs Assessment Chart**

The Planning Needs Assessment Chart is used to determine the level of planning commensurate with the relative risk, potential fire duration, and fire activity. The Planning Needs Assessment Chart indicates the need to establish, remain at, or to move up to the next stage of planning and is the principle guide for transition

throughout the WFIP process. This chart aids managers in assessing the need to complete detailed, long-term assessment and implementation plans for a particular fire. The chart also guides agency administrators in setting priorities for planning needs for multiple fires and ensuring that those fires having the greatest need have the necessary planning done within the framework of management capabilities and time constraints. It must be noted that agency administrators and staff have the prerogative to move to and complete the next or all WFIP Stage(s) for any or all wildland fires at any time. The Planning Needs Assessment Chart is shown in Figure 7.

**Part 2: Fire Use Manager Decision Chart**

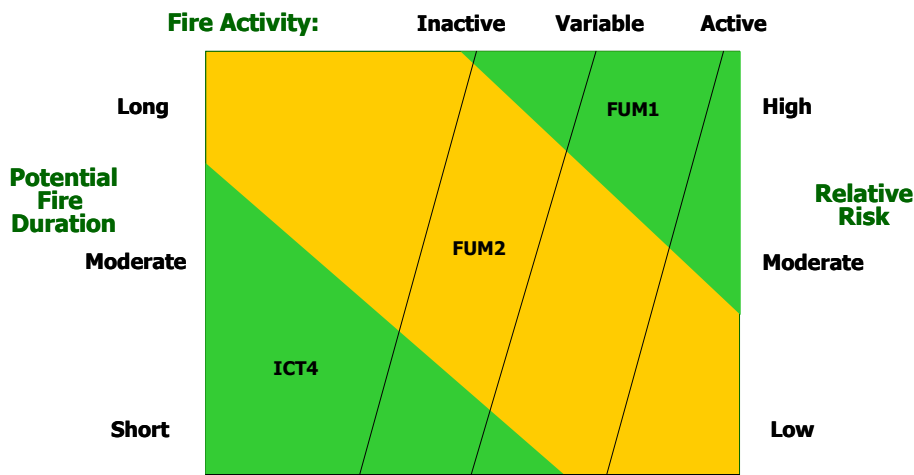
The Fire Use Manager Decision Chart is used during each Stage as part of the Periodic Fire Assessment. This chart aids the Agency Administrator in determining the appropriate qualification levels for implementation of management actions. The Fire Use Manager Decision Chart is shown in Figure 8.



**Figure 7.** Planning Needs Assessment Chart.

To complete the chart in Figure 7, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its

intersection with the line connecting the left and right variables. Read the planning need from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process described above.



**Figure 8.** Fire Use Manager Decision Chart.

To complete the chart in Figure 8, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its intersection with the line connecting the left and right variables. Read the level of Fire Use Manager needed directly from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process.

Initial information to consider in selecting the value for each variable is provided in the following section and after each of the individual charts in the Appendix (Appendix A). This list is not all inclusive and items on the list can be expected to vary by place and time. Users are expected to exercise their judgment in selecting the values; information is intended to provide both guidance in completion and flexibility in determining exactly what the descriptions mean. **Local information can and should be amended to the lists to better reflect site-specific situations.**

**Guidelines for Planning Needs Assessment Chart and Fire Use Manager Decision Chart (while the charts are different and used for different purposes, the input values are the same and the following information applies to both charts).**



**Potential Fire Duration** – the estimated length of time that the fire may continue to burn in comparison to historical fire durations and amount of fire season available for a given area.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like “conducive weather” and “alignment” in the text. This would kind of get away from the “attack” terminology also which I don’t particularly like here.

Short	Moderate	Long
<p>Fire is expected to persist for only the shortest time in comparison to historical fire durations. This may be as short as only a few days. Fuels may be limiting, weather may be limiting, or time of fire season may be limiting. Generally, this could be referenced as less than the historical average fire length for a given area.</p>	<p>Fire is expected to last for a time period similar to the historical average length of fires.</p>	<p>Fire is expected to last for a time period longer than the historical average length of fires.</p>

**Relative Risk** – a measure of the relative risk, determined directly from the Wildland Fire Relative Risk Assessment, so no range of values is listed here.

**Fire Activity** - the relative activity of the fire in terms of intensity and spread over time.

Inactive	Variable	Active
<p>Fire is burning with very low intensity and little or no spread and little or no increase in burned area. Fire is confined to surface litter and duff layers.</p>	<p>Fire is burning predominantly in surface litter and duff layers, with low intensity and little or no spread but has occasional periods of increased intensity and spread. Growth of burned area is not constant but occurs in response to increased activity. Area increase may be static for moderately long periods and then increase for short periods. Fire size usually increases by less than 50% during active periods.</p>	<p>Fire is burning in all fuel strata (litter, surface, and crown) with periods of sustained flaming fronts, perimeter growth, and area increases that can exceed 100% at times. Infrequent periods of low activity occur but spread is generally constant.</p>

## Signature Table

Local fire staff review and complete the assessments and checklist. Once these forms are completed they are taken to the Agency Administrator (or his/her designee) and **must be reviewed and confirmed on the specified assessment frequency.**

On the Signature Table, the following must be completed:

- Assessment Frequency,
- Valid Date(s),
- Signatures
- Date
- Confirmation of Decision Criteria Checklist
- Validation of WFIP Planning Stage
- Confirmation of Fire Use Manager level.

## Assessment Frequency and Valid Dates

The assessment frequency is how often the assessment will be reviewed. This frequency can be daily, but each unit can determine the appropriate assessment frequency. It can be less frequent than a daily requirement.

The frequency for completing the Periodic Fire Assessment is established based on the current and expected fire and weather situation. When units set a monitoring and assessment frequency, they should consider developing a "step-up" frequency based on levels of fire activity, external attention and influences, or other critical concerns. Then, as situational concerns escalate, the monitoring and assessment frequency can correspondingly increase. Conversely, as the situational demands lessen, monitoring and assessment can "step-down" and become less frequent. **Units must identify standards and rationale for establishing assessment frequency, especially "step-up" and "step-down" actions.**

The valid dates reflect the length of time that the identified assessment frequency will be used. If the assessment frequency is changed, the valid dates must be changed accordingly.

## Signatures/Delegation

The Agency Administrator or designated individual must sign the Periodic Fire Assessment Signature Page in conformance with the specified assessment frequency. The Periodic Fire Assessment signature authority can be re-delegated to specific positions as allowed by Agency Policy.

When re-delegation occurs, Agency Administrators must document, in writing, the revalidation authority to the designated individuals. This permits the delegated individual to validate that management capability is adequate to continue management of the fire for resource benefit. If or when fire conditions or complexity levels escalate, Periodic Fire Assessment signature authority will automatically and immediately revert to the Agency Administrator who made the initial delegation of authority.




## Wildland Fire Management Plan - Stage II:

<b>se:</b>	<b>nents specific management objectives, describes the Fire Situation, identifies management concerns, identifies management actions, estimates costs, and documents the Periodic Fire Assessment.</b>
<b>Information Source:</b>	<p>Management actions = developed from staff input and Fire Management Plan.</p> <p>Fire Situation = information available from monitoring the fire, weather observations, and weather forecasts.</p> <p>Periodic Fire Assessment = the minimum risk assessment required is the output from the periodic fire relative risk assessment completed in the Periodic Fire Assessment.</p> <p>Management actions = developed from staff input commensurate with predicted fire behavior, risk assessment, fuel types, fuel continuity, overall objectives, and identified management concerns.</p> <p>Estimated Costs = developed from staff input, based on identified management actions and resources needed.</p>
<b>Completion Time:</b>	Management actions of WFIP Stage II must be completed within 48 hours of need as indicated in the Periodic Fire Assessment.

The WFIP Stage II represents the continuation of management for resource benefits. During this stage, objectives are clearly defined, the Fire Situation is described, Management Actions commensurate with the Fire Situation are established, Cost Estimates are prepared, and the Periodic Fire Assessment is continued to evaluate the need to move to the WFIP Stage III.

Components of the WFIP Stage II and output products are shown in the box to the right.

<p>WFIP Stage II:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Objectives</li> <li><input type="checkbox"/> Fire Situation <ul style="list-style-type: none"> <li><input type="checkbox"/> Current and predicted weather</li> <li><input type="checkbox"/> Current and predicted fire behavior</li> <li><input type="checkbox"/> Threats</li> <li><input type="checkbox"/> Safety considerations</li> <li><input type="checkbox"/> Environmental concerns</li> <li><input type="checkbox"/> External concerns</li> </ul> </li> <li><input type="checkbox"/> Management actions (include description of action and expected duration)</li> <li><input type="checkbox"/> Estimated costs</li> <li><input type="checkbox"/> Periodic fire assessment</li> </ul>
---

Completion of this stage is determined by the Periodic Fire Assessment indicating Stage III is needed, the Agency Administrator directing it to be completed, or the objectives being accomplished with no further need to advance through planning stages.

## ***Objectives***

Land management is the process of making land-use decisions for the future, setting objectives, implementing the actions to accomplish objectives, achieving outputs, and performing evaluations which compare results to objectives. In land management programs, objectives are used to establish desired outcomes for management actions. Objectives represent the single most influential factor in land management program implementation. They are fundamental to successful management to achieve desired land-use decision conditions.

In wildland fire use, goals and objectives are important. Goals are primary basic products of the long range management plans commonly referred to as land-use decisions. They deal with large areas and long time periods. Land-use decisions establish resource condition objectives; allowable, limited, or excluded uses for an area and the term and conditions for such use; and recommend management actions to achieve desired conditions. Objectives, a necessary component of the planning process, provide a bridge between goals and implementation actions. They identify changes resulting from management actions that move from the current situation to a desired situation. Site-specific treatment objectives must be developed to guide project-level operations in wildland fire use. These are very well-defined statements that describe what one or more wildland fires must accomplish to meet resource management objectives, as stated in land and resource management plans.

Objectives defined in WFIP Stage II represent specific statements of accomplishments for wildland fire use and provide a link back to Fire Management Plans and Land and Resource Management Plans. These objectives must be specific, measurable, achievable, relevant, and trackable. At the Stage II planning level, more detailed tactical implementation of strategic objectives for wildland fire use activities takes place. At this level, the WFIP Stage II is a site-specific plan to guide implementation of fire management activities on the ground. Objectives are formulated from local unit input, Agency Administrator direction, Fire Management Plans, and Land and Resource Management Plans.

## ***Fire Situation***

The Fire Situation section describes what the current conditions surrounding the fire are and includes the following:

- Current and predicted weather
- Current and predicted fire behavior (predictions are vital to initial implementation actions because they provide:
  - estimates of fire size and shape at a given time,
  - models of management alternatives,
  - determinations of resource needs, production rates, and requirements,

- placement of resources,
- estimates of behavior under differential weather patterns,
- estimates of ignition patterns, including spotting,
- modeling for contingency action planning,
- developing prescriptions through historical weather records,
- verifying prediction outputs
- Threats
- Safety considerations
- Environmental concerns
- External concerns

The sum total of these efforts will be information on those factors affecting the fire and how it will burn and what it may affect. This information will support decisions on management actions, resource needs, and overall strategy and tactics concerning the appropriate management response.

Risk assessment during this stage can be quickly assessed through the Wildland Fire Relative Risk Assessment Chart during the Periodic Fire Assessment. However, if the unit has the capability to complete full long-term risk assessments through the use of the Rare Event Risk Assessment Process (RERAP), Fire Area Simulator (FARSITE), or other quantitative methods, they are encouraged to do so. This will provide the best information available. In the event such quantitative methods cannot be completed in a timely manner, the wildland fire relative risk assessment can be used to obtain a subjective assessment of the risk. The Stage II Fire Situation can be updated as the current and forecasted weather and other situational factors change.

### ***Management Actions***

The Stage II planning level represents an escalation of both planning and operational actions over those needed for WFIP Stage I implementation. Management Actions in this stage can vary significantly, depending upon specific circumstances of the particular fire. In cases where the fire may be fuel-limited, surrounded by sparse fuels or natural barriers with limited spread potential in relation to values at risk, monitoring may be specified as the predominant implementation actions. Monitoring is necessary to track fire movement, fire activity, fire effects, and to provide information vital to completing the Wildland Fire Use Management Assessment. In other cases, monitoring plus some form of mitigation actions may be necessary. In still other cases, fuel types in which the fire is burning may require immediate actions to delay, direct, or check the spread of fire on one or more flanks. WFIP Stage II [Management Actions should be designed to safely achieve the wildland fire use objectives as detailed in the Fire Management Plan and be based upon the fire situation and forecasted weather and fire behavior.](#) [These actions](#) represent operational activities and [resources needed to](#) accomplish those activities [until](#) monitoring information or the Periodic Fire Assessment indicates a change in management planning and actions is required.

Deleted: 1



## ***Estimated Costs***

Cost Estimates developed in this stage represent projections of expenditures using the resources identified to accomplish the management actions and assume no escalation to Stage III. If the planning needs transition to Stage III, new Cost Estimates that reflect a new set of management actions and a firefighting resource mix will be prepared.

## ***Periodic Fire Assessment***

Once Stage II is completed, the Periodic Fire Assessment must be completed. The process can be continued from Stage I but the Signature Page must clearly reflect the change in "WFIP Planning Stage Required" from Stage I to Stage II. The Agency Administrator (or delegated individual) is required to periodically verify the capability to continue management of the fire as a WFU event. This process documents and ensures management accountability throughout the duration of the wildland fire use event.

The Periodic Fire Assessment consists of the same elements as described for WFIP Stage I (See WFIP Stage I Periodic Fire Assessment description for more information). These include:

- Decision Criteria Checklist
- Wildland Fire Relative Risk Assessment
- Wildland Fire Use Management Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page

# Wildland Fire Implementation Plan - Stage III:

<b>Objective:</b>	<p>Stage III of the Wildland Fire Implementation Plan must be completed within 7 days from when the Periodic Fire Assessment indicates the need. The Agency Administrator can direct it to be completed before the Periodic Fire Assessment does.</p>
<b>Information Source:</b>	<p>Expertise, experience, knowledge, maps, monitoring data, fire behavior prediction, and operational evaluation and identification of tactics and resources: staff negotiated and developed from objectives, maps, on-the-ground evaluation, observation, monitoring, or as set by the FMP.</p>
<b>Completion Time:</b>	<p>Stage III of the Wildland Fire Implementation Plan must be completed within 7 days from when the Periodic Fire Assessment indicates the need. The Agency Administrator can direct it to be completed before the Periodic Fire Assessment does.</p>

This stage represents completion of planning necessary to direct long-term implementation and successfully accomplish the desired objectives. The WFIP has been progressively developed throughout all stages; this represents the final stage. It presents detailed strategic and tactical implementation information and will be attached to information developed in previous stages.

Stage III consists of the information shown in the box to the right.

This stage details operational activities and documents the planning completed to ensure adequate mitigation actions have been developed to reduce or eliminate threats to values. These actions should

- WFIP Stage III:**

  - Objectives and Risk Assessment Considerations
    - Natural and Cultural resource objectives
      - Constraints
  - MMA Definition and Maps
  - Weather Conditions and Drought Prognosis
  - Long-Term Risk Assessment (describe techniques and outputs, include maps as appropriate)
  - Threats
    - MMA
    - Public Use and Firefighter Safety
    - Smoke dispersion and effects
    - Other Resources
  - Monitoring Actions (actions, frequency, and duration)
  - Mitigation Actions (describe holding actions, management action points that initiate these actions, and key to map if necessary)
  - Resources needed to manage the fire
  - Contingency Actions (describe actions necessary when mitigation actions are unsuccessful)
  - Information Plan
  - Estimated costs of long-term implementation actions
  - Post-burn evaluation
  - Signatures and Date
  - Periodic Fire Assessment

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

reduce the probability that fire behavior or fire effects will exceed acceptable limits.

## ***Objectives***

Objectives defined in WFIP Stage III represent site-specific statements of accomplishments for wildland fire use and provide a link back to Fire Management Plans and land use plans. These are very well-defined statements that describe what one or more wildland fires must accomplish to meet resource management objectives. They should be specific, measurable, achievable, related/relevant, and trackable. At the Stage III level, the most detailed tactical implementation of strategic objectives for wildland fire use activities takes place. At this level, the WFIP Stage III is a very detailed operational plan to guide implementation of fire management activities on the ground over potentially longer durations than in Stage I or II. Objectives will be formulated from local unit input, Agency Administrator direction, Fire Management Plans, and Land and Resource Management Plans.

## ***Maximum Manageable Area (MMA) Determination***

All wildland fires being managed under appropriate management response strategies identified in a WFIP Stage III will have a defined MMA. The MMA delineates the geographic limits of the fire area as defined by the capability of management actions to meet resource objectives and mitigate risk for a given wildland fire managed for resource benefits. It represents an important tool in the planning process and serves as a planning reference and not as a rigid prescription element. It is based primarily on natural defensibility and facilitates identification of threats to a management boundary and threats to values within and adjacent to that boundary. It provides a planning basis for risk assessment analyses. It provides for closely directed fire management application in a specific area defined by resource objectives, fire and weather prescription elements, social concerns, political considerations, and management capability.

Maximum Manageable Areas have the following attributes:

- All MMAs are developed from pre-determined areas identified in the Fire Management Plan or during the preparation of Stage III of the Wildland Fire Implementation Plan.
- All MMAs serve as a definition of geographic limits of management capability to meet resource objectives and accommodate the social, political, and resource impacts for all wildland fires managed to meet resource objectives.

← --- Formatted: Bullets and Numbering

- A fire exceeding the MMA does not require an automatic change to a different strategy. There will be cases where a change in strategy from Wildland Fire Use to Wildfire Suppression and the formal implementation of the WFSA process because a wildland fire use event exceeded an established MMA is not prudent or logical. In these situations, experience may indicate that the MMA will be exceeded by the specific wildland fire on a very small or non-threatening scale. Management options in this situation include:
  - ❖ Constraining the fire spread to the small or non-threatening overrun of the original acceptable area using whatever resources are available to deal with the situation. Containment must be accomplished within 48 hours of the end of that burning period, or the fire must be converted to a wildfire accompanied by a WFSA. If containment is successful, management of the fire as a WFU will continue. If the fire is converted to a wildfire, no further acreage gain may be attributed to Wildland Fire Use.
  - ❖ In the case of spotting, any spot occurring outside the MMA from a naturally-ignited fire inside the MMA managed for resource benefits is considered as a natural process and may be treated as a separate fire available to be managed as a WFU. The appropriate management action for this new ignition will be determined separately from the original wildland fire, based on criteria specific to this fire.
- If the Agency Administrator and Fire Management Officer determine that the fire cannot continue to be managed within its original approved boundary, it will be declared a wildfire and a WFSA will be utilized to select a new strategic alternative and appropriate management response.
- An MMA cannot be changed solely on the basis of spread of a single fire toward the MMA in the absence of an imminent season ending event. This type of activity must be anticipated and addressed in the threats and mitigation actions sections of the WFIP Stage III.
- The MMA can be changed to accommodate changes in the management situation. These changes include, but are not limited to, the occurrence of new ignitions managed for resource benefits inside the existing the MMA, the occurrence of new fires within and adjacent to the MMA or outside and in close proximity to the existing MMA, the need to prepare a new WFIP based on changing situation and fire duration, a forthcoming season ending event, etc

### ***Weather Conditions and Drought Prognosis***

A discussion of current weather conditions and trends in comparison to historical records provides insight into the relative severity of the current situation, reinforces fire danger indicators, and supports decision making. A review of the drought situation

provides additional support to fire danger indicators and supports current and future decisions. This information is available from historical weather records, climatological reviews, research information, wildland fire assessment tools, and National Weather Service archives. Information presented here is valuable in further defining the hazard posed by the specific fire(s) being managed. Kinds of information useful for this discussion include, but are not limited to:

- Historical weather trends and patterns
- General wind patterns
- Historical wind direction analyses
- Climatological probabilities
- Historical length of fire season
- Severity of the current season and comparison with other significant fire years
- Seasonal drought outlook
- Precipitation probability over defined time periods

### ***Long-Term Risk Assessment***

Decision-making associated with managing wildland fire for resource benefits can have critical impacts. Risks and uncertainties relating to wildland fire use must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity. It is important to make high quality and informed decisions. Decision-making is facilitated by factual information and prediction of outcomes or consequences of the decision. Of particular importance is the ability to assess the degree of risk presented by the particular wildland fire.

The importance of risk assessment is reinforced through the Guiding Principles from the Fire Policy and affirmed by the 2003 Implementation Strategy that state, "Sound risk management is a foundation for all fire management activities," and "Fire management plans are based on the best available science."

The qualitative process used in Stage I and the Periodic Fire Assessment affords a quick and simple way to estimate fire risk. This process is based on assessing the values, hazard, and probability from a fire. Since the decision to suppress or manage the fire is time constrained, it is not always possible to complete a quantitative long-term assessment of risk. In lieu of the quantitative long-term risk assessment, this qualitative assessment process provides the Agency Administrator with a quick and fairly comprehensive assessment of the "relative risk" of the fire

During the most detailed planning stage of the WFIP (Stage III), an assessment of the long-term risk that a particular fire may present is required. This is critical input information to ongoing management activities, development of mitigation strategies and actions, continuing support for decisions about the fire, and future implementation activities. Technological advances in fire behavior prediction, meteorological analysis, fire spread estimation, fire effects prediction, smoke production and dispersal, rare event assessment, and fire area simulation make it possible to obtain better information, reduce uncertainty, assess potential fire outcomes, evaluate consequences of failure, and determine probabilities of success more effectively than ever before. Using these techniques to gain the type of information necessary for consideration in decision-making promotes better management choices and ultimately, more desirable outcomes. As new technology becomes operationally available for application in management situations, it will be utilized to improve operational actions to the greatest degree possible. The Long-Term Risk Assessment is also based on the principles of assessing values, hazard, and probability. These three elements are not directly assessed in the risk

assessment, but pervade the entire Stage III planning process. The sum total of this information is used by the Agency Administrator to reduce uncertainty and support management decisions and actions.

Specific assessment outputs useful in evaluating long-term risk include:

- Indications of how the fire may burn; predictions of intensity and severity,
- Fuel conditions, moisture conditions, departures from average conditions,
- Fire dynamics - indicators of potential rapid escalation in fire behavior,
- Analysis and comparison of current fire danger indicators with historical data and trends,
- Fire history reviews, records of past fires in terms of area burned and type of fires (i.e., low - moderate intensity, surface fire, stand replacement, etc.),
- Probability of the fire reaching the planning area boundary (MMA),
- Probability of a season-ending weather event,
- Probability of a fire-slowng weather event,
- Probability of a large spread weather event,
- Indications of where the fire may spread, or total area that may be burned by the fire,
- How fast the fire will travel,
- How soon the fire may reach critical sites or the planning area boundary,
- Predictions of the range of potential fire effects on natural and cultural resources,
- Probability of adverse smoke events and dispersal.
- Review of past precipitation history.

An array of decision-making support aids is available to support wildland fire assessments. The choice of technique will depend on the information needed and the state of knowledge regarding that subject area. Techniques may range from a subjective, descriptive comparison to a very objective in-depth analysis using sophisticated mathematical models and quantitative data as available on the local unit. The Stage III Long-Term Risk Assessment provides quantitative information derived from specific analyses which utilize historic weather data, long-term climatological data, fuel moisture data, fuel conditions, fire danger, seasonal severity, satellite imagery, and simulation modeling. Use of technological tools is appropriate when a specific method can give the decision-maker information that reduces uncertainty associated with possible outcomes and facilitates the best decision possible.

No mandatory requirements exist for risk assessment. **However, in the WFIP Stage III, an assessment must be completed that yields some of the information listed in the output list above.** Units are encouraged to acquire input information and data and to utilize available long-term risk assessment techniques such as the Rare Event Risk Assessment Process (RERAP) Fire Area Simulator (FARSITE), fire effects indicators such as those gained from the Fire Order Fire Effects Model (FOFEM), and smoke emissions models. Risk assessments will both utilize and affect information contained in the Weather Conditions and Drought Prognosis, Threats to the MMA, Threats to Public Use and Firefighter Safety, Threats to Smoke dispersion and effects sections of the WFIP Stage III. Assessment outputs will have a direct bearing on information developed and included in the Monitoring Actions, Mitigation Actions, Resources needed to manage the fire, and Contingency Actions sections of the WFIP Stage III. As the quality of risk assessment increases, the quality of subsequent

decisions and probability of desirable outcomes will increase. Units should strive for the highest quality decisions possible.

Table 3 illustrates some common models useful in assessing wildland fire.

**Table 3.** Computer applications for assessing wildland fire.

<b>Model</b>	<b>Description</b>
<b>BehavePlus</b>	<p>BehavePlus can be used to predict a number of different factors given different fuel loadings, arrangements, and weather that describe fire behavior, in terms of rate of spread, flame length, size of fire, and spotting distances.</p> <p>The BehavePlus fire modeling system is a PC-based program that is a collection of models that describe fire and the fire environment. It is a flexible system that produces tables and graphs and can be used for a multitude of fire management applications. BehavePlus is the successor to the <i>BEHAVE fire behavior prediction and fuel modeling system</i>.</p>
<b>CANADIAN FOREST FIRE DANGER RATING SYSTEM (CFFDRS)</b>	<p>The CFFDRS is comprised of two primary subsystems: The FWI, or Fire Weather Index System and The FBP, or Fire Behavior Prediction System. The FWI System depends solely on daily weather measurements, is a good indicator of several aspects of fire activity, and is best used as a measure of general fire danger for administrative purposes.</p> <p>The FBP System allows the user to predict the rate of spread (meters per minute), fuel consumption (kilograms per square meter), and intensity (kilowatts per meter) at the head, back, or flanks of fires that are still accelerating after ignition or have reached a steady-state condition with their environment. A general description of the type of fire is also given (for instance, surface fire or intermittent crowning). A simple elliptical fire growth model is employed in estimating the size and shape of fire originating from a single ignition source as opposed to an established line of fire.</p>
<b>CONSUME</b>	<p>Consume 2.1 is a PC-based, interactive fuel consumption model that predicts total and smoldering fuel/biomass consumption during prescribed fires and wildland fires. Predictions are based on weather data, the amount and fuel moisture of fuels, and a number of other factors.</p>
<b>FARSITE (Fire</b>	<p>A fire growth simulation model that computes fire behavior and</p>

**Area Simulator)** spread over a range of time under conditions of heterogeneous terrain, fuels, and weather. This model projects where and how fast a fire may spread and how hot or intense it may burn. It is a fire growth simulation model that uses spatial information on topography and fuels along with weather and wind files. It incorporates the existing models for surface fire, crown fire, spotting, post-frontal combustion, and fire acceleration into a 2-dimensional fire growth model.



<b>FFE-FVS (Fire and Fuels Extension – Forest Vegetation Simulator)</b>	A model developed to simulate forest growth and yield but has been adapted to provide information for fuels reduction. Expected fire behavior and effects if a wildland fire burns through an area over the simulation period.
<b>FireFamilyPlus</b>	The fire climatology and occurrence program that combines and replaces the PCFIRDAT, PCSEASON, FIRES, and CLIMATOLOGY programs into a single package with a graphical user interface for the PC.
<b>FIREMON</b>	FIREMON is an inventory and fire effects monitoring package that provides fire managers with sampling methods, data storage, and a data analysis package.
<b>FlamMap</b>	A software program that creates geographic information system maps of potential fire behavior characteristics and environmental conditions. It is not a replacement for <i>FARSITE</i> or a fire growth simulation model. There is no temporal component in FlamMap. It uses spatial information on topography and fuels to calculate fire behavior characteristics at one instant.
<b>FEIS (Fire Effects Information System)</b>	Fire effects Information System-provides up-to-date information on fire effects on plants, animals, and ecosystems.
<b>FOFEM (First Order Fire Effects Model)</b>	A computer program for predicting tree mortality, fuel consumption, smoke production, and soil heating caused by prescribed fire or wildfire. First order fire effects are those that concern the direct or indirect or immediate consequences of fire. First order fire effects form an important basis for prediction of secondary effects such as tree regeneration plant succession, and changes in site productivity, but these long-term effects generally involve interaction with many variables (for example, weather, animal use, insects, and disease) and are not predicted by this program. Currently, FOFEM provides quantitative fire effects information for tree mortality, fuel consumption mineral soil exposure, smoke and soil heating.
<b>LANDFIRE</b>	LANDFIRE is a wildland fire, ecosystem, and fuel assessment-mapping project designed to generate consistent, comprehensive, landscape-scale maps of vegetation, fire, and fuel characteristics

for the United States. LANDFIRE includes a Rapid Assessment, which will map and model Fire Regime Condition Class (FRCC) at a broad-scale resolution for the entire United States by the summer of 2005. The Rapid Assessment is designed to fill data needs before the entire suite of LANDFIRE products is available and to help refine reference vegetation dynamics models for the LANDFIRE project.

**NFDRS  
(National Fire  
danger Rating  
System)**

This system combines weather, climate, and fuels information to predict the relative fire danger and potential for wildland fires to occur on a daily basis.

**NEXUS**

A crown fire hazard analysis software that links separate models of surface and crown fire behavior to compute indices of relative crown fire potential. NEXUS can be used to compare crown fire potential for different stands, and to compare the effects of alternative fuel treatments on crown fire potential. NEXUS includes several visual tools useful in understanding how surface and crown fire models interact.

**RERAP (Rare  
Event Risk  
Assessment  
Process)**

Determines probabilities that a wildland fire will reach or exceed an MMA or reach an area of concern due to a rare weather event. It also can provide probabilities of a season-ending event and smoke events.

**VCIS**

The ventilation climate information system (VCIS) allows users to assess risks to values of air quality and visibility from historical patterns of ventilation conditions.

**VDDT  
(Vegetation  
Dynamics  
Development  
Tool)**

This model uses state in transition models or box and arrow diagrams to show how vegetation can change over time.

**WFAS  
(Wildland Fire  
Assessment  
System)**

The Wildland Fire Assessment System is an internet-based information system. The current implementation provides a national view of weather and fire potential, including national fire danger and weather maps and satellite-derived "Greenness" maps.

---

***Threats***

Identification of all known and anticipated threats is critical in evaluating values, hazard, and probability for the fire(s). The nature of long-term strategic planning involves anticipating and predicting where the fire may move to, what it may impact, and designing a strategy to minimize or eliminate those impacts. Threats must be defined for the MMA boundary, all sensitive natural and cultural resources inside and immediately outside that boundary, firefighters and the public, air quality, and other concerns as appropriate. Once a threat is defined in this section of the Stage III, it must be linked through subsequent sections and appropriate actions (monitoring and mitigation) must be tied to that identified threat.

### ***Monitoring Actions***

A monitoring plan of action is necessary to ensure successful accomplishment of the objectives and to continually acquire information relevant to the fire situation. Monitoring is useful for documenting observed fire weather, observed fire behavior, fire movement toward management action points (MAP), fire effects, smoke dispersal and volume, and to aid in validating fire behavior and weather forecasts. Monitoring variables that are important can include, but are not limited to: smoke dispersal, live and dead fuel moistures, daily weather observations, fire perimeter and progression mapping, and observed fire behavior. Monitoring frequency will be based on fire activity and location. All monitoring information will be analyzed, applied as needed, and archived as part of the final documentation package.

### ***Mitigation Actions***

Science-based risk assessments, as discussed in the previous section, provide a solid foundation for developing a successful risk management/mitigation strategy. But, it must be clearly understood that risk assessment and risk management are not synonymous. Based on the risk assessment, decision-makers decide what to do about managing the risk. A part of the WFIP Stage III is a detailed plan that identifies mitigation actions, the activities for mitigating or eliminating risk. Risk can be mitigated or eliminated in three central ways: reduce the hazard, reduce the probability of the hazardous event occurring, and reduce the value of potential losses that could occur from the risk.

In wildland fire use, the first two risk mitigation types are the most frequently utilized, identified as mitigation actions in the implementation plan, and implemented as needed. Mitigation actions are on-the-ground activities that serve to increase the defensibility of a particular point, area, or line, like a planning area boundary (to reduce the probability of the hazardous event occurring); to check, direct, or delay the spread of fire (reduce the hazard); and to minimize threats to life, property, and resources (reduce value of potential losses). Mitigation Actions serve to mitigate or eliminate identified threats and may include non-fire tasks and specific fire applications.

Management action points are tactical decision points, either geographical points on the ground both inside and outside the MMA or specific points in time where an escalation or alteration of management actions is warranted in response to fire activity, proximity to identified threats, time of season, weather changes, or management decisions. The points are placed on maps that accompany the WFIP. They can be started in Stage II and added to in Stage III for long range needs. These points must be tied to identified

threats in the plan. Each management action point will have one or more corresponding mitigation actions described which will need implementation when the fire reaches it or after a specified time period. This documentation stays with the fire through its management and is amended periodically as new management action points and mitigation actions are developed. As management personnel change over the life of a wildland fire, this documentation provides continuity in direction needed when a fire approaches the management action point.

### ***Resources Needed to Manage the Fire***

Based on the Monitoring and Mitigation Actions, the Information Plan, and management oversight and qualifications needed to accomplish the objectives, resources needed to implement the plan and accomplish the objectives must be identified in this section. Resources identified here include those needed for the projected duration of operations as described in Stage III.

### ***Contingency Actions***

Contingency actions are actions necessary when mitigation actions are unsuccessful. They are identified for implementation to control the spread of fire into unwanted areas or to prevent it from adversely impacting a sensitive value. For example, if the fire crosses the MMA at any point along the perimeter and mitigation was unsuccessful, on-site firefighting resources will be utilized to achieve control. If control cannot be accomplished, the fire will be converted to a wildfire. A WFSA will be prepared to select the proper strategic alternative and necessary resources.

### ***Information Plan***

Among agency staff, cooperators, and affected publics, fire use objectives, risks, and tradeoffs are not always well understood or well accepted. Communication and education of all agency personnel involved with the planning and implementation of the use of wildland fire is crucial to successful program implementation. An understanding of the guiding principles and objectives by the public and media is essential for full social and political acceptance and endorsement of this program. As a result, it is becoming increasingly important to establish and maintain an aggressive and efficient communication and education effort for wildland fire use programs and for each wildland fire that is managed. In addition, wildland fire use operational actions are often viewed negatively.

This element of the WFIP Stage III provides documentation of the role of Information during the wildland fire use event, the message to be communicated, and operational procedures and processes to ensure that the information reaches all applicable audiences and supports local unit needs.

### ***Estimated Costs***

Cost Estimates developed in this Stage are projections of expenditures expected to be incurred during implementation over the predicted duration of the fire. These estimates will include both costs expended to date and projections from the signed date into the future.

### ***Post-Burn Evaluation***

Post-burn evaluations will be conducted as dictated by Agency Policy to evaluate the degree of accomplishment of stated objectives and desired fire effects. Secondly, an evaluation of the total operation is vital to improvement of programmatic efficiency. Specific areas that may be evaluated include, but are not limited to:

- Management and mitigation of safety,
- Use of best available science, including weather and fire behavior forecasts, long-term risk assessments, fire growth simulations if applicable,
- Short-term fire effects,
- Public information and education, notification of individuals, groups, and areas potentially impacted by fires,
- Consistency with land and resource management plans and fire management plans,
- Attention to resource management issues and concerns.

### ***Signatures and Date***

The WFIP Stage III must be approved by the Agency Administrator or delegated individual upon completion. This approval is documented by signature and date at the end of the Stage III. This approval does not constitute the Periodic Fire Assessment which must be continued on the set frequency after completion of the Stage III.

### ***Periodic Fire Assessment***

Once Stage III is completed, the Periodic Fire Assessment is completed. The process can be continued from Stage I or II but the Signature Page must clearly reflect the change in "WFIP Planning Stage Required" to Stage III. The Agency Administrator (or delegated individual) is required to periodically affirm the capability to continue management of the fire as a WFU event. This process will document and ensure management accountability throughout the duration of the wildland fire use event.

The Periodic Fire Assessment consists of the same elements as described for WFIP Stage I (See WFIP Stage I Periodic Fire Assessment description for more information. These include:

- Decision Criteria Checklist
- Wildland Fire Relative Risk Assessment
- Wildland Fire Use Management Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page

# Chapter 4: Wildland Fire Use Management Organizations

---

## Organizational Needs

Managing wildland fire for a wide range of objectives across diverse land uses and vegetative complexes subject to a mixture of fire regimes is one of the highest risk and complex programs facing natural resource managers. Organizational needs to complete this management vary significantly with site-specific circumstances. All wildland fires managed for resource benefits (wildland fire use) will have a position commensurate with the fire situation and needs (see Wildland Fire Use Assessment) assigned. The additional personnel necessary to accomplish the objectives and implement the WFIP will be determined for the specific situation locally.

No interagency standards exist for the configuration of teams responsible for preparation of Wildland Fire Implementation Plans, the duration of time that they must be in place, and what products they must create. Use of an Incident Action Plan is appropriate for all fires that exceed the first few days when actions must be performed by on-the-ground personnel. This is a safety concern and is necessary to provide clear and concise direction, to document assigned resources and mitigation actions and other safety issues like frequency assignments and emergency medivac procedures. Long term management of wildland fires include periods of fire behavior that range from extremely active to inactive. Fire activity will cycle with weather, fuel moisture and availability, and successful implementation of mitigating actions. Having someone with expert fire behavior knowledge in the management organization is advised.

As conditions escalate, management needs will increase; additional personnel can be added to support and assist the Fire Use Manager, and, if conditions extend to the highest difficulty levels, a formal management team can be ordered. These formalized teams may make the most significant contribution in support of local units and management of the fire. These teams may be developed locally from unit and cooperator personnel or be formal, established Fire Use Management Teams (FUMT) obtained through the established resource ordering process. A Fire Use Management Team has a minimum standard of Type II qualified personnel, with the IC having attended S-580 Advanced Fire Use Applications. The FUMT includes an Incident Commander, Planning Section Chief, Operations Section Chief, Logistics Section Chief, Safety Officer, Information Officer and Long Term Fire Behavior Analyst (LTAN). Normally at least three additional positions are filled which may be different on each assignment and are determined by the Incident Commander and the Agency Administrator.

The capability to predict fire behavior and assess long term management considerations is critical and in most situations is done by the LTAN who is trained in using fire behavior and risk assessment models and familiar with information technology. The LTAN is critical in predicting the potential area and extent of burning, assessing long-term risk, and validating the maximum manageable area (MMA). He/she also predicts the potential of a fire to reach certain values that may be threatened over the long term and the potential timing of a fire ending event. An FBAN provides tactical fire behavior predictions, obtains weather observations and forecasts, and assesses short-term risk.

Amending the WFIP is important. In the Stage I and Stage II levels the WFIP will require amending as often as the current and forecasted weather expires, which is an element of those Stages. This can be expected to happen every 5-7 days at a minimum. Stage III may be more encompassing in regard to long-term assessment and mitigation planning but will also require periodic amendments. Normally as the fire season progresses, new mitigation actions are developed and new fires may be authorized in the original MMA. Mapping, weather predictions and seasonal severity assessments will change over the life of the fire which need to be included as updated information becomes available. Agency Administrators are required to approve any amendments to the plan as they occur.



## References

---

- National Academy of Public Administration. 2001. *Managing wildland fire: enhancing capacity to implement the Federal Interagency Policy*. Washington, D.C.
- National Fire and Aviation Executive Board. 2005a. *Three kinds of wildland fire*. Briefing Paper #03. National Interagency Fire Center, Boise, ID.
- National Fire and Aviation Executive Board. 2005b. *Use of wildland fire*. Briefing Paper #02. National Interagency Fire Center, Boise, ID.
- U.S. General Accounting Office. 2004. *Wildland Fires: Forest Service and BLM need better information and a systematic approach for assessing the risks of environmental effects*. Washington, D.C. (name changed to U.S. Government Accounting Office).
- USDI/USDA/DOE/DOD/DOC/USEPA/FEMA/NASF. 2001. *Review and update of the 1995 Federal Wildland Fire Management Policy*. Washington, D.C.
- USDI/USDA. 1998. *Wildland and prescribed fire: implementation procedures reference guide*. Boise, ID.
- USDA/USDI. 2003. *Interagency strategy for the implementation of Federal Wildland Fire Management Policy*. Washington, D.C. 62 p

# Appendix A:

---

## Wildland Fire Implementation Plan

Standardized, reproducible forms for the WFIP process are included in this Appendix. While a standardized format is provided for the WFIP (in Word format) that can be used to prepare the document, an electronic version similar to the WFSA electronic program will be available. Users can choose to prepare a WFIP by using the forms presented in this Appendix or by using the electronic version when available.

Specific forms are included for the complete WFIP:

### WFIP Stage I:

- Strategic Fire Size-Up
- Decision Criteria Checklist
- Relative Risk Rating
  - Wildland Fire Relative Risk Assessment: Step 1: Determining Values
  - Wildland Fire Relative Risk Assessment: Step 2: Determining Hazard
  - Wildland Fire Relative Risk Assessment: Step 3: Determining Probability
  - Wildland Fire Relative Risk Assessment: Step 4: Determining Wildland Fire Relative Risk
- Planning Needs Assessment Chart
- Fire Use Manager Decision Chart

### WFIP Stage II:

### WFIP Stage III

# Wildland Fire Implementation Plan

## Table of Contents

Fire Name

Fire Number

Administrative Unit(s)


*Documentation Product*

*Neede  
d Complete  
d*

**WFIP Stage I:**

- Strategic Fire Size-Up**
- Decision Criteria Checklist**
- Management Actions**
- Periodic Fire Assessment**


**WFIP Stage II:**

- Objectives**
- Fire Situation**
- Management Actions**
- Estimated Costs**
- Periodic Fire Assessment**


**WFIP Stage III**

- Objectives**
- MMA Definition**
- Weather Conditions and Drought Prognosis**
- Long-Term Risk Assessment**
- Threats**
- Monitoring Actions**
- Mitigation Actions**
- Resources Needed**
- Contingency Plan**
- Information Plan**
- Estimated Costs**
- Post-Burn Evaluation**
- Signatures and Date**
- Periodic Fire Assessment**


**Appendix**

--	--


## WFIP Stage I:

*Strategic Fire Size-Up:*

<b>Fire Name</b>		
<b>Fire Number</b>		
<b>Administrative Unit(s)</b>		
<b>Start Date/Time</b>		
<b>Discovery Date/Time</b>		
<b>Current Date/Time</b>		
<b>Current Size</b>		
<b>Fuel Model</b>		
<b>Current Weather</b>		
<b>Observed Fire Behavior</b>		
<b>Location: Legal Description(s)</b>		
<b>Latitude Longitude</b>		
<b>Local Description</b>		
<b>FMU</b> (circle appropriate FMU situation)	WFU not Approved	WFU Approved

<b>Cause</b> (circle fire cause)	Human Caused Ignition	Natural ignition
-------------------------------------	-----------------------	------------------

<b>Suitability for Wildland Fire Use</b> (circle situation, initials of person preparing, date/time)	<b>Suppression</b>	<b>Wildland Fire Use Candidate –</b> Continue with Decision Criteria Checklist	<b>Initials</b>	<b>Date/Time</b>
---	--------------------	---	-----------------	------------------

# Decision Criteria Checklist

## Decision Element

Is there a threat to life, property, or public and firefighter safety that cannot be mitigated?

Are potential effects on cultural and natural resources outside the range of acceptable effects?

Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?

Is there other proximate fire activity that limits or precludes successful management of this fire?

Are there other Agency Administrator issues that preclude wildland fire use?

Yes	No

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

Recommended Response Action (check one)		Signature/Position	Date
Suppression Response			
Wildland Fire Use Response			

### Justification for Suppression Response:

---



---



---



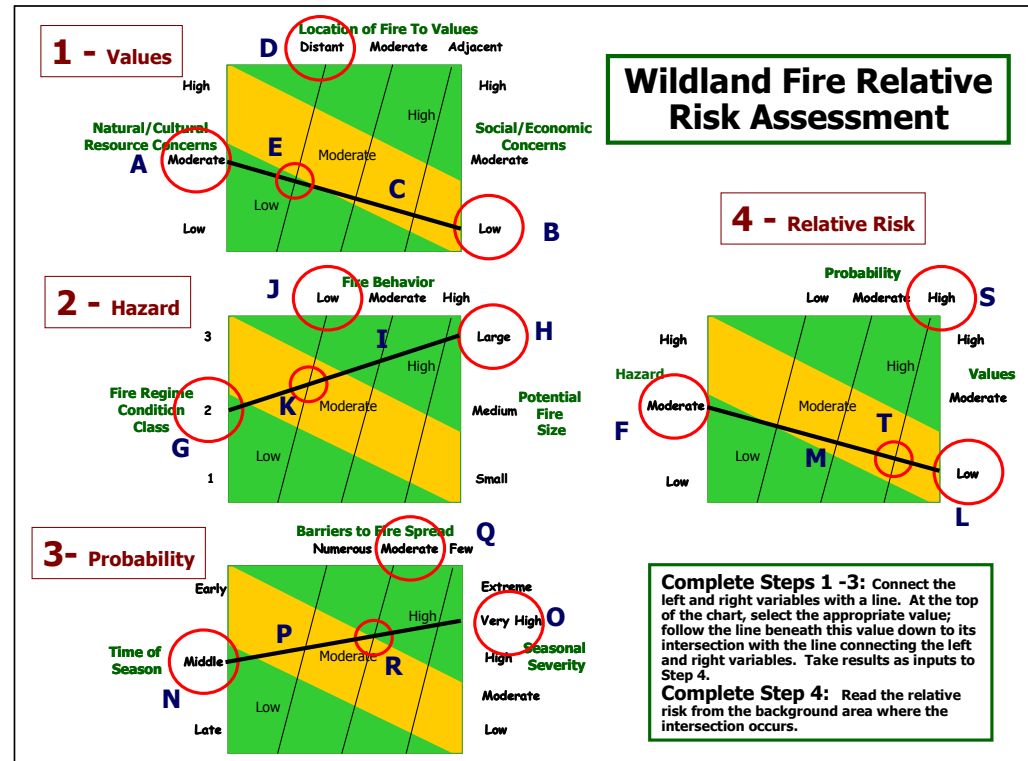
---



---

<b>A</b>	Step 1	Locate Natural/Cultural Resource Concern level
<b>B</b>	Step 1	Locate Social/Economic Concern level
<b>C</b>	Step 1	Draw line connecting left and right variables
<b>D</b>	Step 1	Locate Location of Fire to Values level
<b>E</b>	Step 1	Follow interior line down to intersection with line connecting left and right variables, locate Value Assessment output (Low, Moderate, High)
<b>F</b>	Step 4	Take Step 1 - Value Assessment output to Step 4 as Value input
<b>G</b>	Step 2	Locate Fire regime condition class level
<b>H</b>	Step 2	Locate Potential Fire Size level
<b>I</b>	Step 2	Draw line connecting left and right variables
<b>J</b>	Step 2	Locate Fire Behavior level
<b>K</b>	Step 2	Follow interior line down to intersection with line connecting left and right variables, locate Hazard Assessment output (Low, Moderate, High)
<b>L</b>	Step 4	Take Step 2 - Hazard assessment output to Step 4 as Hazard input
<b>M</b>	Step 4	Draw line connecting Value and Hazard levels
<b>N</b>	Step 3	Locate Time of Season level
<b>O</b>	Step 3	Locate Seasonal Severity level
<b>P</b>	Step 3	Draw line connecting left and right variables
<b>Q</b>	Step 3	Locate Barriers to Fire Spread level
<b>R</b>	Step 3	Follow interior line down to intersection with line connecting left and right variables, locate Probability Assessment output (Low, Moderate, High)
<b>S</b>	Step 4	Take Step 3 - Probability assessment output to Step 4 as Probability input
<b>T</b>	Step 4	Follow interior line down to intersection with line connecting left and right variables, locate Relative Risk Assessment (Low, Moderate, High)

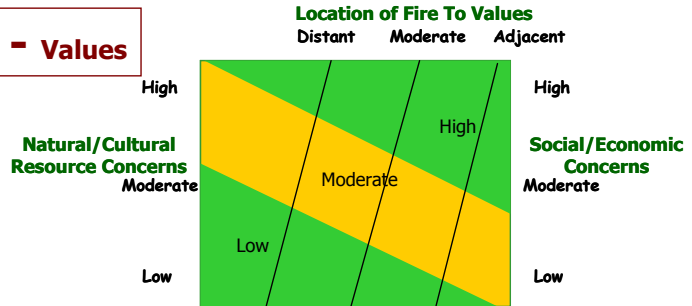
## Step-By-Step Instructions for Completing the Wildland Fire Relative Risk Assessment



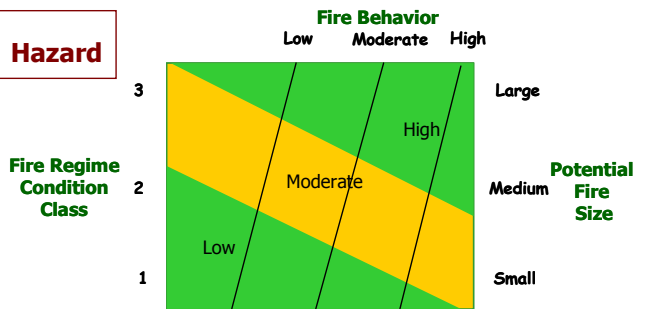


# Wildland Fire Relative Risk Assessment

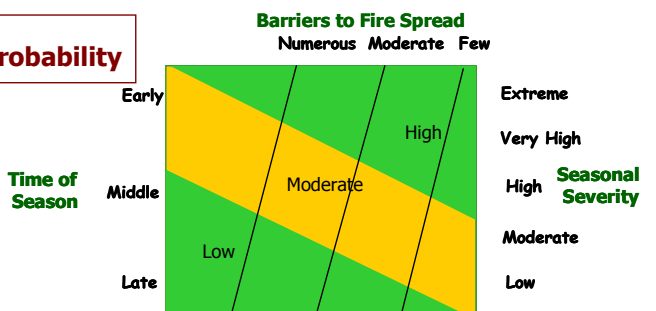
## 1 - Values



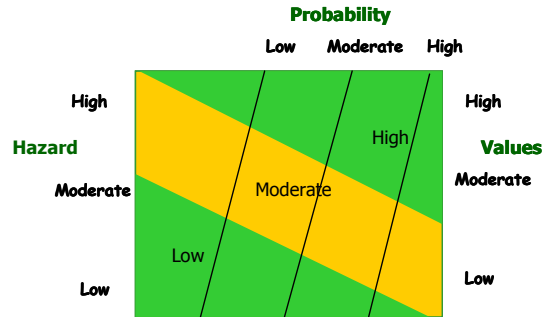
## 2 - Hazard



## 3 - Probability



## 4 - Relative Risk

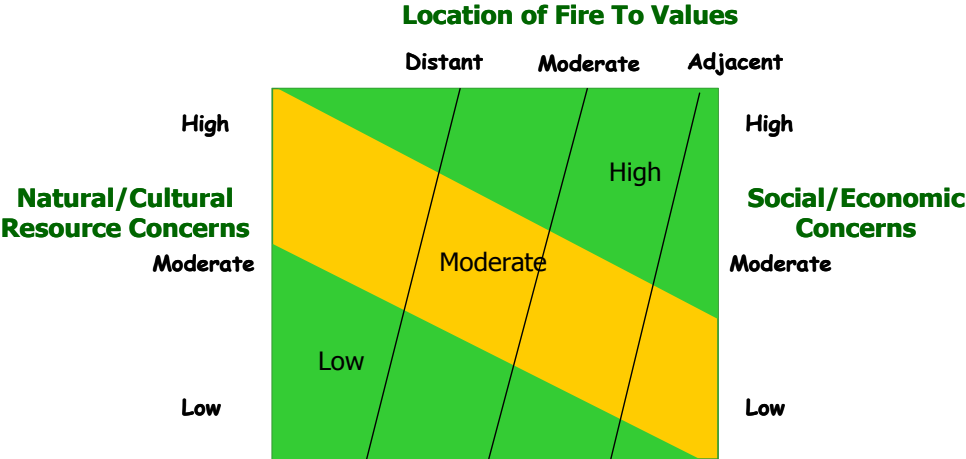


**Complete Steps 1 -3:** Connect the left and right variables with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Take results as inputs to Step 4.

**Complete Step 4:** Read the relative risk from the background area where the intersection occurs.



# Wildland Fire Relative Risk Assessment: Step 1: Determining Values



Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Read the Value Assessment from the background area where the intersection occurs.

**Notes:**

**PART 1: VALUE ASSESSMENT:** Values are those ecologic, social, and economic effects that could be lost or damaged because of a fire. Ecologic values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecologic functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities. This assessment area allows opportunity for the local agency administrator to identify particular local concerns. These concerns may be identified in the fire management plan or other planning documents.

Formatted: Font: (Default) Tahoma, 9 pt

Formatted: Font: (Default) Tahoma, 9 pt

**Natural/Cultural Resource Concerns** - key resources potentially affected by the fire. Examples include, but are not limited to habitat or populations of threatened, endangered, or sensitive species, water quality, erosion concerns, and invasive species.

Low	Moderate	High
Resource concerns are few and generally do not conflict with management of the fire. Mitigation measures are effective.	Significant resource concerns exist, but there is little conflict with management of the fire. Mitigation measures are generally effective.	Multiple resource concerns exist, some of which may conflict with management of the fire. The effectiveness of needed mitigation measures is not well established.

**Social/Economic Concerns** - the risk of the fire, or effects of the fire, impacting the social or economic concerns of an individual, business, community or other stakeholder involved with or affected by the fire. Social concerns may include degree of support for the Wildland Fire Use program or resulting fire effects, potential consequences to other fire management jurisdictions, impacts to tribal subsistence or gathering of natural resources, air quality regulatory requirements and public tolerance of smoke. Economic concerns may include potential financial impacts to property, business, or infrastructure. Infrastructure impacts may be costs to repair or replace sediment catchments, wildlife guzzlers, corrals, roads, culverts, power lines, domestic water supply intakes, and similar items.

Low	Moderate	High
Local support for wildland fire use is high. The fire should have little or no impact on subsistence or tribal activities involving treaty rights. The fire is expected to remain within a single jurisdiction or agreements are in place to allow the fire to move across several jurisdictions. Media coverage is favorable. Few structures or business ventures are potentially affected by the fire. There are few impacts to recreation and tourism.	Local support of wildland fire use is clearly divided between supporters and opponents. The fire will have some impacts on subsistence or tribal activities involving treaty rights. The fire is expected to involve more than one jurisdiction, cooperator, or special interest group and agreements need to be developed. Media coverage tends to be a mix of favorable and unfavorable views. Some structures may be threatened by the fire or some business ventures have been affected by the fire.	Local support for wildland fire use is low. The fire will have significant impacts on subsistence activities or tribal activities involving treaty rights. Smoke impacts may become a concern for higher level air quality regulatory agencies. The fire is expected to involve several jurisdictions, cooperators, and special interest groups and agreements requiring significant negotiation need to be developed. Media coverage tends to be unfavorable. Many structures or private properties could be threatened.

**Location of Fire to Values**

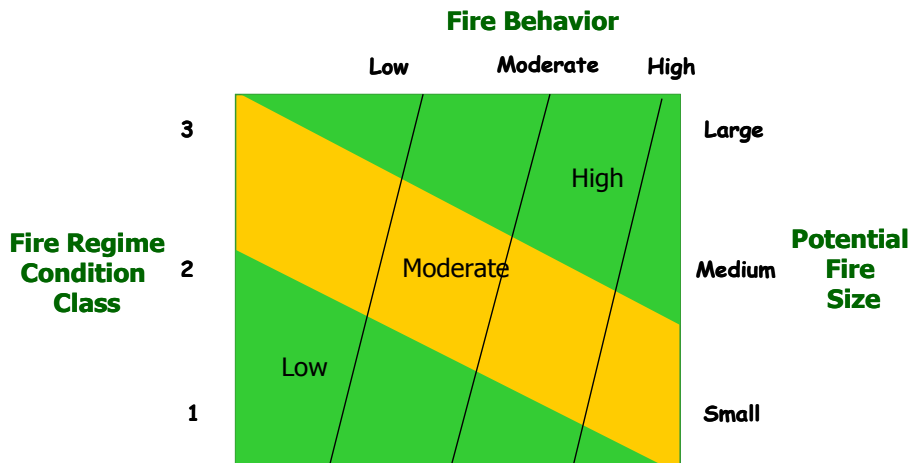
Distant	Moderate	Adjacent
Fire location is not proximate to values to be protected or fire is located where it is	Fire location is moderately proximate to values. Location is such that, based on historical	Fire location is in close proximity to values. Without mitigation actions, fire will be expected to

highly unlikely that it would reach the values.

data, fire could potentially reach the values but will take multiple burning periods and sustained fire activity to reach the values.

reach the values.

## Wildland Fire Relative Risk Assessment: Step 2: Determining Hazard



Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Read the Hazard Assessment from the background area where the intersection occurs.

Notes:

**PART 2: HAZARD ASSESSMENT:** The hazard in wildland fire is made up of the conditions under which it occurs and exists, its ability to spread and circulate, the intensity and severity it may present, and its spatial extent.

**Current Fire Behavior** – the current fire behavior or that most recently observed. Changing fire behavior is addressed through repeated completion of the Periodic Fire Assessment.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like “conducive weather” and “alignment” in the text. This would kind of get away from the “attack” terminology also which I don’t particularly like here.

Low	Moderate	High
Short duration flaming front with occasional torching. Fuels are uniform and fire behavior can be easily predicted and tactics implemented.	Short range spotting occurring. Moderate rates of spread are expected with mainly surface fire and torching. Fuels and terrain are varied but don’t pose significant problems in holding actions.	Long range spotting > ¼ mile. Extreme rates of spread, and crown fire activity are possible. Fuels, elevation, and topography vary throughout the fire area creating high resistance to control.

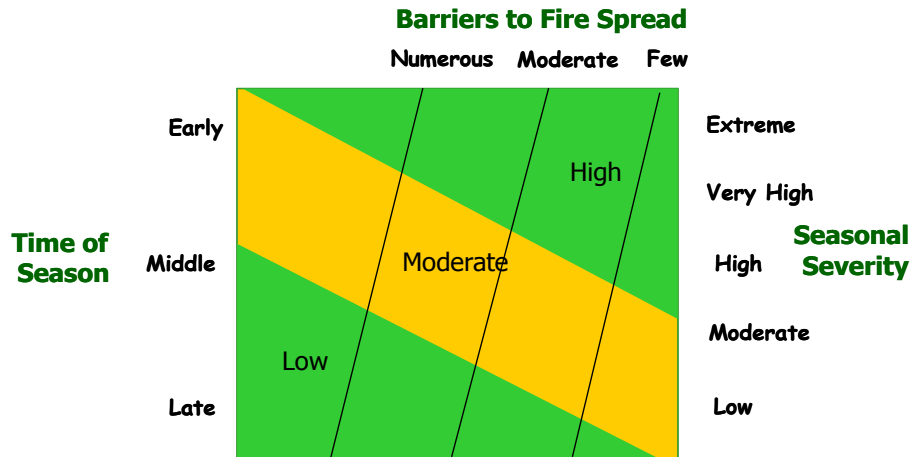
**Fire Regime Condition Class** – a measure of ecological functions at risk based on changes in vegetation.

1	2	3
Vegetative composition and structure are resilient and key components are at low risk of loss. Few, if any, fire return intervals have been missed and fuel complexes are similar to historic levels.	Both the composition and structure of vegetation has shifted towards conditions that are less resilient and more at risk of loss. Some fire return intervals have been missed, stand structure and composition, and fuel complexes have been altered and present potential for fires of severity and intensity levels in excess of historic levels.	The highly altered composition and structure of the vegetation predisposes the landscape to fire effects well outside the range of historic variability, potentially producing changed fire environments never before measured.

**Potential fire size** - the potential fire size by the end of the season in comparison to historical fire occurrence.

Small	Medium	Large
Fire size is expected to be small for the dominant fuel type involved	Fire size is expected to be in the mid-range for the dominant fuel type involved	Fire size is expected to be large for the dominant fuel type involved.

## Wildland Fire Relative Risk Assessment: Step 3: Determining Probability



Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Read the Probability Assessment from the background area where the intersection occurs.

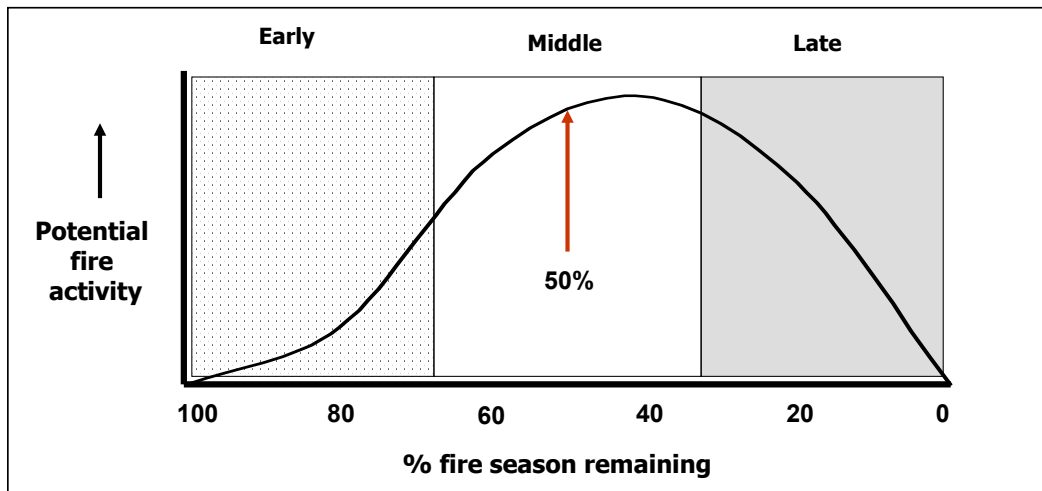
### Notes:



**PART 3: PROBABILITY ASSESSMENT:** Probability refers to the likelihood of a fire becoming an active event having potential to adversely affect values.

**Time of Season** - the current time in relation to the historical fire season. The chart below the guidelines reinforces the importance of time of season. During the early part of the fire season, the peak of burning activity is still to come, thus the fire could present substantial variation in behavior and activity. In the middle of the season, the peak of burning activity may or may not have occurred while in the late part of the season, the peak of fire activity generally has occurred and managers can reasonably expect diminishing fire activity and behavior as time progresses. As the amount of fire season remaining decreases or as the time of season progresses from early to late, management concerns and issues associated with potential fire activity decrease.

Early	Middle	Late
The current date is in the early portion of the historic fire season, at least 2/3 of the established fire season remains and the peak of burning activity is still to come.	The current date is in the middle of the historic fire season, at least 1/3 of that period has passed and no less than 1/3 remains. The peak burning activity period either has occurred, is occurring now, or will occur very soon.	The current date is in the latter part of the historic fire season. At least 2/3 of the historic period has passed, the peak burning activity period has occurred, and the probability of a season-ending or fire-ending event is increasing quickly.



**Seasonal Severity** - a measure of the potential burning conditions as expressed by factors such as ERC, drought status, live fuel moistures, dead fuels moistures, soil moisture, stream discharge, and similar types of measures.

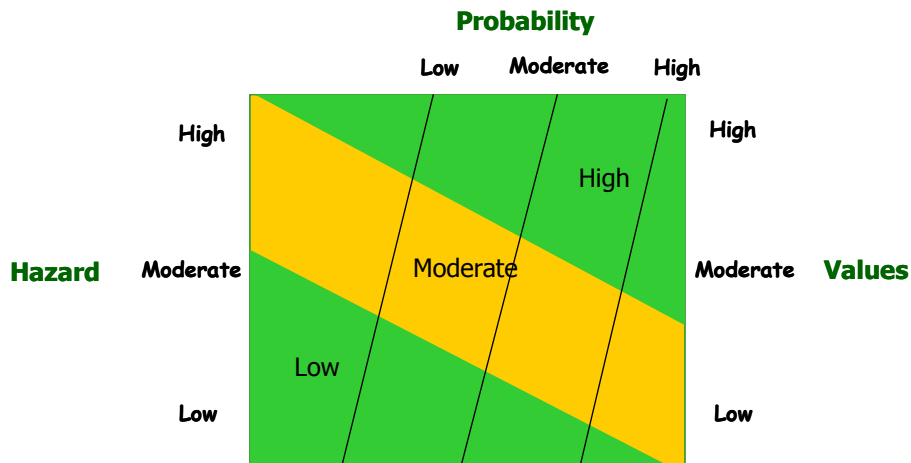
**Comment:** Changes made to match Risk Charts

Low	High	Extreme
Measures of fire danger are below to somewhat above seasonal averages. Drought status is within seasonal norms with no long-term drought present	Measures of fire danger are well above seasonal averages but not setting new records. The area is in short-term drought (1-2 years of drought) but not considered to be in long-term drought.	Measures of fire danger are setting new records. The area is considered to be in long-term drought (3 or more years of drought).

**Barriers to Fire Spread** – a measure of the natural defensibility of the fire location and an indication of degree of potential mitigation actions needed.

<b>Numerous</b>	<b>Moderate</b>	<b>Few</b>
The location of the fire and presence of natural barriers and fuel breaks limit the horizontal fuel continuity, minimal mitigation actions on-the-ground will be needed.	The location of the fire and presence of some natural barriers and fuel breaks limit the horizontal fuel continuity on some, but not all fire flanks, some mitigation actions on-the-ground will be needed to protect threats to boundaries and sensitive areas.	The location of the fire and presence of only limited natural barriers and fuel breaks will permit fire spread across continuous fuels. Mitigation actions on-the-ground will be needed but are expected to be effective.

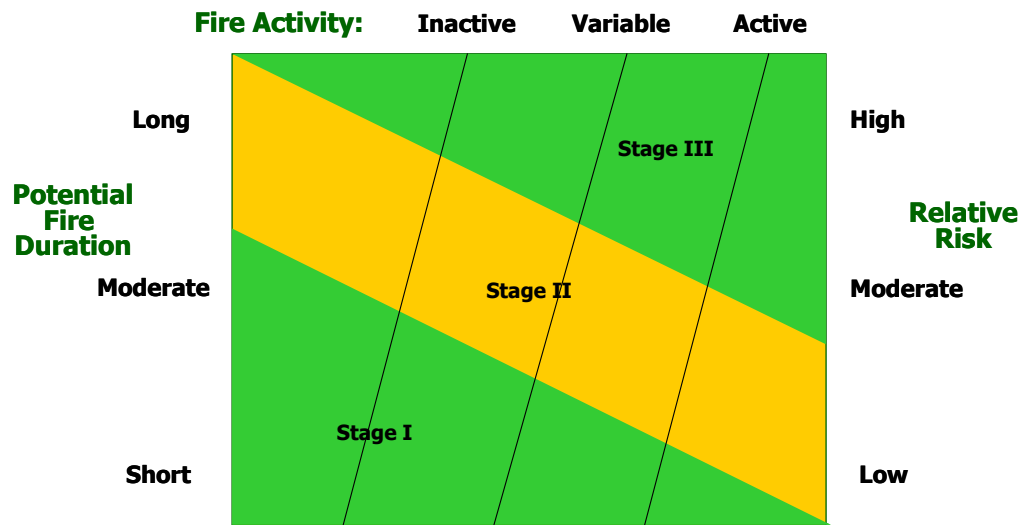
## Wildland Fire Relative Risk Assessment: Step 4: Determining Wildland Fire Relative Risk



Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Read the Relative Risk from the background area where the intersection occurs.

### Notes:

# Planning Needs Assessment Chart



To complete the chart, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its intersection with the line connecting the left and right variables. Read the planning need from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process (Wildland Fire Relative Risk Assessment).

**Guidelines for Planning Needs Assessment Chart.**

**Potential Fire Duration** – the estimated length of time that the fire may continue to burn in comparison to historical fire durations and amount of fire season available for a given area.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like “conducive weather” and “alignment” in the text. This would kind of get away from the “attack” terminology also which I don’t particularly like here.

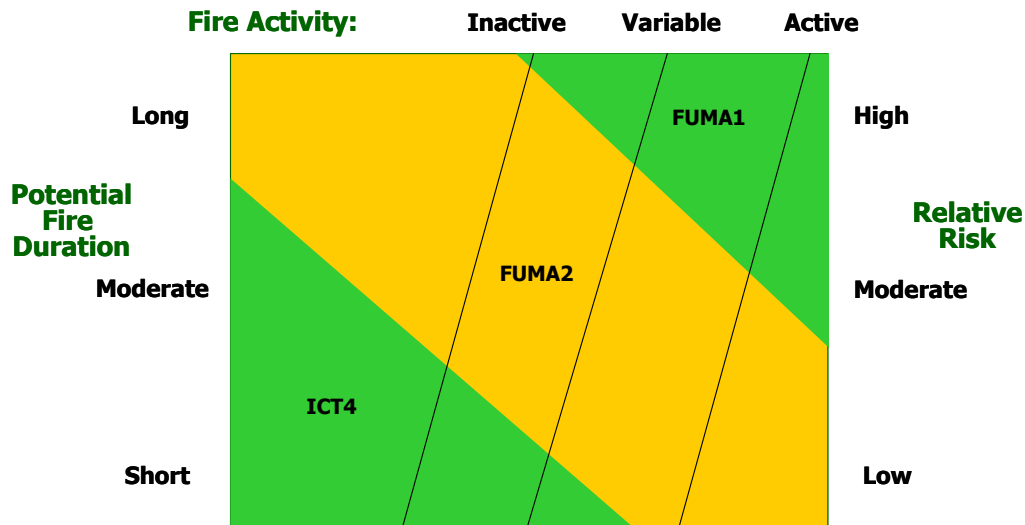
Short	Moderate	Long
<p>Fire is expected to persist for only the shortest time in comparison to historical fire durations. This may be as short as only a few days. Fuels may be limiting, weather may be limiting, or time of fire season may be limiting. Generally, this could be referenced as less than the historical average fire length for a given area.</p>	<p>Fire is expected to last for a time period similar to the historical average length of fires.</p>	<p>Fire is expected to last for a time period longer than the historical average length of fires.</p>

**Relative Risk** – a measure of the relative risk, determined directly from the Wildland Fire Relative Risk Assessment, so no range of values is listed here.

**Fire Activity** - the relative activity of the fire in terms of intensity and spread over time.

Inactive	Variable	Active
<p>Fire is burning with very low intensity, little or no spread, and little or no increase in burned area. Fire is confined to surface litter and duff layers.</p>	<p>Fire is burning predominantly in surface litter and duff layers, with low intensity and little or no spread but has occasional periods of increased intensity and spread. Growth of burned area is not constant but occurs in response to increased activity. Area increase may be static for moderately long periods and then increase for short periods. Fire size usually increases by less than 50% during active periods.</p>	<p>Fire is burning in all fuel strata (litter, surface, and crown) with periods of sustained flaming fronts, perimeter growth, and area increases that can exceed 100% at times. Infrequent periods of low activity occur but spread is generally constant.</p>

# Fire Use Manager Decision Chart



To complete the chart, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its intersection with the line connecting the left and right variables. Read the level of Fire Use Manager needed directly from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process (Wildland Fire Relative Risk Assessment).

**Guidelines for Fire Use Manager Decision Chart.**

**Potential Fire Duration** – the estimated length of time that the fire may continue to burn in comparison to historical fire durations and amount of fire season available for a given area.

Short	Moderate	Long
<p>Fire is expected to persist for only the shortest time in comparison to historical fire durations. This may be as short as only a few days. Fuels may be limiting, weather may be limiting, or time of fire season may be limiting. Generally, this could be referenced as less than the historical average fire length for a given area.</p>	<p>Fire is expected to last for a time period similar to the historical average length of fires.</p>	<p>Fire is expected to last for a time period longer than the historical average length of fires.</p>

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like “conducive weather” and “alignment” in the text. This would kind of get away from the “attack” terminology also which I don’t particularly like here.

**Relative Risk** – a measure of the relative risk, determined directly from the Wildland Fire Relative Risk Assessment, so no range of values is listed here.

**Fire Activity** - the relative activity of the fire in terms of intensity and spread over time.

Inactive	Variable	Active
<p>Fire is burning with very low intensity, little or no spread, and little or no increase in burned area. Fire is confined to surface litter and duff layers.</p>	<p>Fire is burning predominantly in surface litter and duff layers, with low intensity and little or no spread but has occasional periods of increased intensity and spread. Growth of burned area is not constant but occurs in response to increased activity. Area increase may be static for moderately long periods and then increase for short periods. Fire size usually increases by less than 50% during active periods.</p>	<p>Fire is burning in all fuel strata (litter, surface, and crown) with periods of sustained flaming fronts, perimeter growth, and area increases that can exceed 100% at times. Infrequent periods of low activity occur but spread is generally constant.</p>

***Management Actions:***

**Forecasted  
Weather**

--

**Forecasted Fire  
Behavior**

--

**Hazards and  
Safety Concerns**

--

**Management  
Actions**

--

**Availability of  
Resources**

--



## **Periodic Fire Assessment**

Insert the following sections, either by completing new versions or by using those already completed as part of the WFIP Stage I:

- Decision Criteria Checklist
- Wildland Fire Risk Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page




## WFIP Stage II:

Attach Stage I information.

*Objectives:*

**Objectives**

--

*Fire Situation:*

**Current and Predicted Fire Behavior**

--

**Current and Predicted Weather**

--

**External Concerns**

--

**Environmental Concerns**

--

**Safety Considerations**

--

**Threats**

--

*Management Actions:*

**Management Actions**

--

***Estimated Costs:***  
**Estimated Costs**

--

## **Periodic Fire Assessment**

Insert the following sections, either by completing new versions or by using those already completed as part of the WFIP Stage I:

- Decision Criteria Checklist
- Wildland Fire Risk Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page






## WFIP Stage III:

Attach Stage I and Stage II information. Update and/or revise Stage I and II as necessary.

*Objectives:*

<b>Natural and Cultural Resource Objectives</b>	
<b>Constraints</b>	

*Maximum Manageable Area (MMA) – Definition and Maps*

<b>Acres in MMA:</b>	
<b>Definition of MMA:</b>	
<b>Attach Map of MMA</b>	

*Weather Conditions and Drought Prognosis*

<b>Weather Conditions/Drought: Discussion and Prognosis</b>	
---	--

*Long-term Risk Assessment and Map (if applicable)*

<b>Risk Assessment (Describe</b>	
----------------------------------	--

**techniques utilized and outputs, include maps as appropriate)**

--

***Threats***

**Threats to MMA**

--

**Threats to Public Use and Firefighter Safety**

--

**Smoke Dispersion and Effects**

--

**Other Threats**

--

***Monitoring Actions***

**Describe Monitoring Actions, Frequency, Duration**

--

***Mitigation Actions***

**Describe Holding Actions and Other Mitigation Actions, and Management Action Points that initiate these actions, and Key to Map if necessary**

--

***Resources Needed to Manage the Fire Under Expected Weather Conditions***

**Describe resources necessary to accomplish ignition, holding, other mitigation actions, and monitoring actions**

--

***Contingency Actions***

**Describe Contingency actions,**

--

**management  
action points that  
initiate them,  
resources needed,  
etc.**

--

***Information Plan***

**Describe  
Information Plan,  
Contacts,  
Responsibilities,  
etc.**

--

***Estimated Costs of Managing the Fire***

**Describe costs in  
terms of resources  
needed, projected  
duration, etc.**

--

***Post-burn Evaluation***

**Describe post-  
burn evaluation  
procedures,  
resource**

--

**requirements,  
costs, duration,  
etc.**

--

***Signatures***  
**Include  
signatures/titles/  
dates for  
preparing,  
approving, and  
any concurring  
individuals**


## **Periodic Fire Assessment**

Insert the following sections, either by completing new versions or by using those already completed as part of the WFIP Stage I:

- Decision Criteria Checklist
- Wildland Fire Risk Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page






## Appendix B:

---

### Preplanning WFIP Elements

Parts of the WFIP can be planned well in advance of the fire season. Preplanning is especially critical in those fuel types where fires develop rapidly and a “long duration” fire is only a few days. In many cases, these elements can be part of the fire management unit information in the fire management plan. The following items from the WFIP can be preplanned:

- Objectives – all or most of these should be known in advance and based on the resource objectives in the land use plan and the fire management unit objectives.
- Constraints – standards and guidelines within the land use plan and fire management unit are the basis for any operational constraints. These constraints typically affect which types of activities may occur where or when.
- Safety Considerations – document those safety considerations associated with various aspects of the environment, such as cliffs or mineshafts; with well known and generally regular weather events, such as foehn winds; and with particular times of the year, such as hunting seasons.
- Values at Risk – document those values threatened by either the simple presence of fire, and certain fire intensity, or any appropriate management response actions that may be taken. These values may consist of different types of natural and cultural resources or physical features such as campgrounds or private property.
- External Concerns – these consist of concerns known to exist for cooperators, adjacent owners or land managers, communities, regulatory agencies, and other stakeholders (i.e. the critical concerns discussed as part of the relative risk rating). Not all concerns can be known in advance since some are situational and not tied to a particular fire management unit. The Objectives and Constraints should adequately cover internal concerns.
- Implementation Actions – some preliminary implementation actions, or appropriate management responses, can be developed in advance, particularly for Stage I and Stage II. Most often, these will consist of different levels of monitoring to some holding or checking actions. Units that expect to develop Stage III without the aid of a Fire Use Management Team may develop more detailed descriptions of the allowable responses or a list of response options.
- Maximum Manageable Area – preliminary MMAs can be designated based on roads, jurisdictional or land allocation boundaries, watershed boundaries, or

similar features. These MMAs are not finalized until a wildland fire use event occurs and management is elevated to Stage III. Preliminary MMAs can include information on which segments are naturally defensible and which are not, as well as what types of actions may be needed to increase the defensibility of the those segments. Preplanned MMAs may be the only option for some fire management units.

- Management Action Points – preliminary management action points may be identified to address certain types of values at risk or preliminary MMA boundaries. Full development may not happen until the fire occurs since the appropriate management response often depends on fire behavior.
- Monitoring Plan – do not confuse the monitoring plan with monitoring as an appropriate management response. The monitoring plan is intended to determine if the fire is meeting or has met the management objectives. Since nearly all the management objectives should be known in advance, this plan can also be prepared in advance.
- Information Plan – use experience from past fires, both suppression and wildland fire use, to develop many elements of the information plan. Some elements may be more situational or new contacts or contact methods may occur between the development of this preliminary plan and an actual fire.
- Agreements – although not technically part of the WFIP, fully implementing a WFIP may require that cross-jurisdiction agreements be in place to allow the fire to move from one jurisdiction to another. These jurisdictions may be other land management agencies; state or local fire protection agencies or districts; or private landowners.

In addition to WFIP elements, several types of data are recommended for advanced development or for addition to the fire management plan as data are developed from different fires. As appropriate, update data each year. The following list is not exhaustive but intended as a tickler.

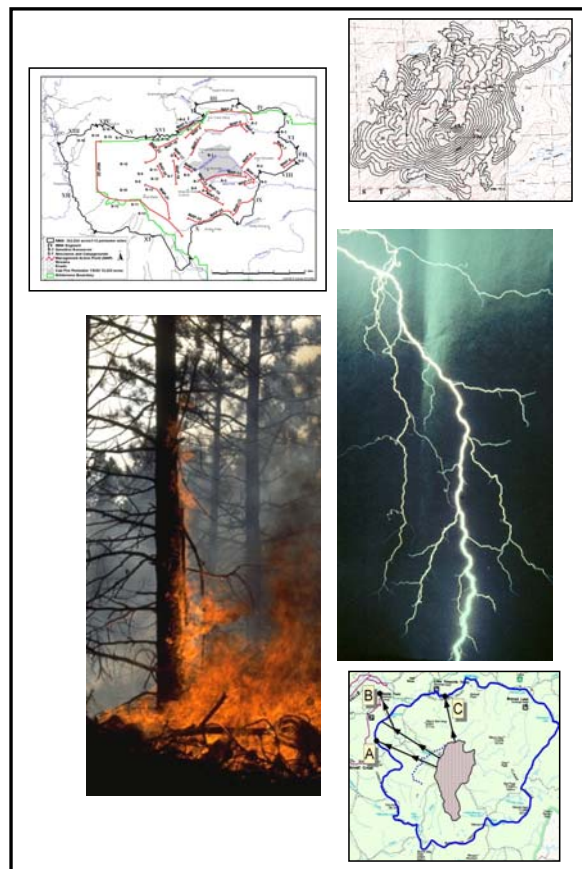
- Weather Data
  - NFDRS station catalogs and weather files
  - Definitions for:
    - Season or fire ending event
    - Fire slowing events (event plus number of days the event is effective)
    - Large fire growth events or key weather events that result in large fire growth
- Term files for use in RERAP
- Preliminary RERAP assessments for individual FMUs with assumptions (risk of fire movement over set distances by time of year and general direction)

- FARSITE layers, including changes resulting from the previous year's fires and vegetation management actions
- Structure protection plans
- Potential evacuation needs, routes and responsibilities, which should be shared with the appropriate authority in advance of an ignition.
- Mitigation measures for TES species (plants, animals, and fish) that have been successful in the past
- Data Layers (actual data or location of data)
  - Fuels
  - Roads and trails
  - Streams
  - Values to be protected (some of this data may be protected).
  - Land status
  - Fire history
  - Fuels treatment history
  - Vegetation type or dominant species
  - Vegetation structure
  - Potential vegetation
  - Fire regime or fire regime condition class
  - Smoke sensitive areas



# Wildland Fire Use

## Implementation Procedures Reference Guide



**February 2005**

# Contents

---

---

Contents.....	i
Executive Summary.....	lii
Chapter 1. Introduction .....	1
Chapter 2. Wildland Fire Use Planning and Assessment .....	4
Wildland Fire Implementation Plan.....	4
Minimum Planning and Implementation Qualifications.....	6
Wildland Fire Implementation Plan Completion Timeframes.....	8
Chapter 3. Detailed Description - Wildland Fire Implementation Plan Procedures .....	9
Wildland Fire Implementation Plan - Stage I.....	9
Strategic Fire Size-Up: .....	10
Decision Criteria Checklist .....	10
Alternative Risk Assessment Methods .....	19
Management Actions .....	20
Periodic Fire Assessment.....	21
Wildland Fire Management Plan - Stage II: .....	30
Objectives.....	31
Fire Situation .....	31
Management Actions .....	32
Estimated Costs .....	33
Periodic Fire Assessment.....	33
Wildland Fire Implementation Plan - Stage III: .....	34
Objectives.....	35
Maximum Manageable Area (MMA) Determination.....	35
Weather Conditions and Drought Prognosis .....	36
Long-Term Risk Assessment .....	37
Threats.....	42
Monitoring Actions.....	43
Mitigation Actions .....	43
Resources Needed to Manage the Fire.....	44

Contingency Actions .....	44
Information Plan .....	44
Estimated Costs .....	45
Post-Burn Evaluation .....	45
Signatures and Date .....	45
Periodic Fire Assessment.....	45
Chapter 4: Wildland Fire Use Management Organizations .....	47
Organizational Needs .....	47
References .....	49
Appendix A: .....	50
Wildland Fire Implementation Plan.....	50
Appendix B: .....	lxxxix
Preplanning WFIP Elements.....	lxxxix

**Comment:**

# Executive Summary

---



The following Implementation Procedures Reference Guide (2005 Guide) provides direction, guidance, and assistance in implementing the Federal Wildland Fire Management Policy, specifically associated with the planning and implementation of wildland fire use, for the National Park Service, USDA Forest Service, Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, and the Bureau of Land Management.



Originally, this document was published as the *Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide*



(USDI/USDA1998) (1998 Guide). The 1998 Guide established consistent agreement between agencies regarding specific, detailed implementation of federal fire policy direction. The 2005 Guide represents the first revision to the original and expands and clarifies the process for wildland fire use planning and implementation consistent with the Federal Wildland Management Policy



Review and Update (USDI/USDA/DOE/DOD/USEPA/FEMA/NASF 2001) and the Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (USDA/USDI 2003). The 2005 Guide tiers directly to agency policy and guidance as specifically cited in agency manuals.

The Wildland Fire Use Implementation Procedures Reference Guide, February 2005, describes basic policy framework and clarifies what is and is not applicable within policy. The new Implementation Guide incorporates changes and revisions based on seven years of experience in using the original process.

The purpose of the 2005 Guide is to provide standardized interagency operational level interpretation and implementation of the appropriate management response to all wildland fires, but has the greatest value for potentially long-duration wildland fires. Planning, implementation procedures, management requirements, and formats, including the Wildland Fire Implementation Plan (WFIP), are provided. The WFIP is a progressively developed strategic plan consisting of three stages appropriate for changing levels of fire complexity and management needs.

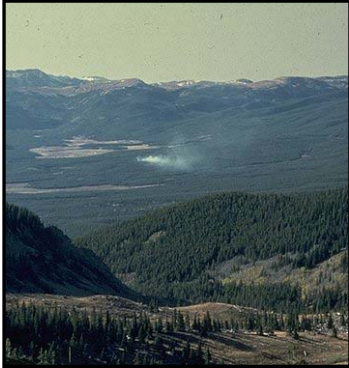
Effective and efficient implementation of wildland fire is the goal of the Federal Fire Policy. Managing wildland fires to accomplish resource objectives, maintain public and firefighter safety, and manage cost expenditures requires significant information archival to document the management decision process for wildland fire use and other wildland fires. This evolving documentation process has been the cornerstone of successful applications of wildland fire use over the past 30 years.





# Chapter 1. Introduction

---



The Departments of Interior and Agriculture, together with Tribal governments, States, and other jurisdictions, have responsibility for protection and management of natural and cultural resources on public and Indian Trust lands in the United States. Managing wildland fires for resource benefit (wildland fire use) is an option available to Federal Agencies who have an approved land use plan and fire management plan that allow for wildland fire use. Opportunities and risks associated with management of wildland fire use and other long-duration fire incidents are increasing in both complexity and geographic extent. Escalating values to be protected associated with intricate land use objectives are compounding fire use management program implementation concerns. Uniform Federal policies and procedures are essential to facilitate greater efficiency and responsiveness in the management of fire to meet resource objectives.

Wildland fire use, based on the Federal Fire Policy direction, is a direct component of wildland fire management. It is a management action equal to wildfire suppression and thus, constitutes an emergency action. It receives consideration, management attention, and management policies equal to wildfire suppression, except for specific differences related to ignition source and management action success (see Operational Clarification Statements below).

This guide provides procedures and requirements to implement the full range of wildland fire use management actions within an appropriate management response framework consistent with the Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (USDI/USDA 2003). Policy statements from the Federal Wildland Fire Policy directly relevant to wildland fire use (WFU) include:

***Safety:*** Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment.

***Fire Management and Ecosystem Sustainability:*** The full range of fire management activities will be used to achieve ecosystem sustainability including its interrelated ecological, economic, and social components.

***Response to Wildland Fire:*** Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, and across agency boundaries. Response to wildland fires is based on ecological, social and legal consequences of the fire.

***Use of Wildland Fire:*** Wildland fire will be used to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role. Use of fire will be based on approved Fire Management Plans and will follow specific prescriptions contained in operational plans.

**Science:** *Fire management plans and programs will be based on a foundation of sound science. Research will support ongoing efforts to increase our scientific knowledge of biological, physical, and sociological factors. Information needed to support fire management will be developed through an integrated interagency fire science program.*

**Interagency Cooperation:** *Fire management planning, preparedness, prevention, suppression, fire use, restoration and rehabilitation, monitoring, research, and education will be conducted on an interagency basis with the involvement of cooperators and partners.*

**Communication and Education:** *Agencies will enhance knowledge and understanding of wildland fire management policies and practices through internal and external communication and education programs.*

Operational clarification statements from the Federal Fire Policy directly relevant to wildland fire use include:

*"Only one management objective will be applied to a wildland fire. Wildland fires will either be managed for resource benefits or suppressed. A wildland fire cannot be managed for both objectives concurrently. If two wildland fires converge, they will be managed as a single wildland fire."*

*"Human caused wildland fires will be suppressed in every instance and will not be managed for resource benefits."*

*"Once a wildland fire has been managed for suppression objectives, it may never be managed for resource benefit objectives."*

*"Wildland fire use is the result of a natural event. The Land/Resource Management Plan, or the Fire Management Plan, will identify areas where the strategy of wildland fire use is suitable. The Wildland Fire Implementation Plan (WFIP) is the tool that examines the available response strategies to determine if a fire is being considered for wildland fire use."*

*"When a prescribed fire or a fire designated for wildland fire use is no longer achieving the intended resource management objectives and contingency or mitigation actions have failed, the fire will be declared a wildfire. Once a wildfire, it cannot be returned to a prescribed fire or wildland fire use status."*

Clarifying terms and definitions from the Federal Fire Policy having importance to wildland fire use include:

**Wildland Fire:** Any non-structure fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use and prescribed fire.

**Wildland Fire Use:** The application of the appropriate management response to naturally-ignited wildland fires to accomplish specific resource management objectives in predefined designated areas outlined in Fire Management Plans.

Other Policy clarifying briefing papers include:

**Three Kinds of Fire:** *Wildfire, wildland fire, and prescribed fire.* (National Fire and Aviation Executive Board 2005a).

**Use of Wildland Fire:** *Either wildland fire use or prescribed fire applications to meet resource objectives* (National Fire and Aviation Executive Board 2005b).

While unique agency missions may cause wildland fire use management operational differences, it is expected that these differences will be minor and will not limit cross-jurisdictional planning and implementation. The interagency wildland fire use planning and implementation procedures described in this guide will enhance effective and efficient operations across administrative boundaries, facilitate short- to long-duration management, reduce problems or suspensions of operations during personnel transfer of commands, improve agency ability to meet other challenges and opportunities when managing wildland fires for resource benefit, and fulfill the standardization of procedures and policies direction from the Federal Fire Policy.

The reference guide is structured to provide a management summary for each section (in red boxes), then more detailed descriptions of processes and contains reproducible forms in Appendix A.

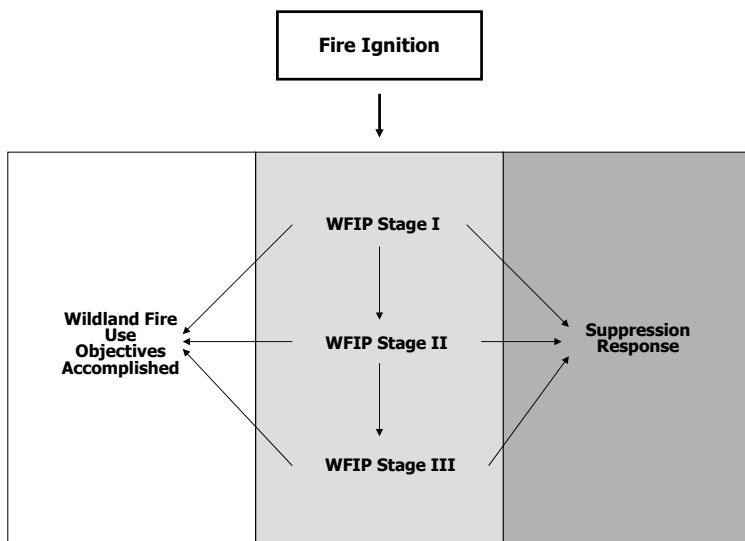
# Chapter 2. Wildland Fire Use Planning and Assessment

## Wildland Fire Implementation Plan

Specific planning and documentation requirements exist for management of wildland fires where resource benefits are a primary objective. The full planning process used for Wildland Fire use events is uniquely different than the processes used for management of unwanted wildfires. Figure 1 illustrates the basic Wildland Fire Use planning process.

Deleted: <sp>  
Inserted: <sp>

A standard Wildland Fire Implementation Plan (WFIP) has been developed. The complete WFIP consists of three stages and is prepared progressively. Each individual stage constitutes a stand alone implementation plan and specific forms and formats are available for each stage. Progression from one stage to the next is dependent upon fire activity, potential duration, and relative risk as it relates to the incident. As each progressive stage is prepared, it is attached to the previous stage and becomes the guiding document until management of the fire accomplishes resource objectives or progression to a higher stage occurs.



Since each stage can be completed individually and used as a stand-alone plan, it is possible that an individual fire will be managed under only Stage I for its duration. Some fires will progress to Stage II and some will progress to Stage III. Thus, the overall objectives for managing individual fires can be accomplished through successful implementation of any or all of the stages, as illustrated by the left portion of Figure 1.

**Figure 1.** Generalized flow of Wildland Fire Implementation Plan showing progression of stages and points of movement to a suppression response.

WFIP Stage I documents the fire situation, Agency Administrator decision, management actions, and sets the initial periodic assessment schedule. This Stage is the initial stage of the planning process. Given suitable circumstances, it can be used to manage a fire with low potential for spread and negative impacts. Components of the WFIP Stage I include:

- Strategic Fire Size-Up (documents fire situation, including fire location and cause). A Strategic Fire Size-Up is completed for all wildland fires and provides information necessary to decide whether to implement a wildland fire use or a suppression response. All wildland fires naturally caused and in a fire management unit approved for wildland fire use become wildland fire use candidates. For fires not meeting these criteria, the WFIP planning stops at this point and a suppression action is initiated. For wildland fires meeting these criteria (WFU candidate), the planning continues into the Decision Criteria Checklist.
- Decision Criteria Checklist (documents the decision to manage fire for resource benefits or initiate a suppression action)
- Management Actions (identifies management actions)
- Periodic Fire Assessment (set assessment frequency, confirms decision to continue with WFU, identifies planning stage needs and implementation qualification levels). A Periodic Fire Assessment is completed as part of each Stage on a schedule determined by Managers. Completing this step in Stage I provides direction to move to Stage II, remain with Stage I, or initiate a suppression response.

**Deleted:** . A WFU event can be managed at any of the Stages in the process if complexity and risk remain low.

**Inserted:** A WFU event can be managed at any of the Stages in the process if complexity and risk remain low.

The Strategic Fire Size-Up, Decision Criteria Checklist, and Periodic Fire Assessment are points in the WFIP Stage I where a suppression response could be indicated (Figure 1) although the Agency Administrator can decide to suppress a fire at any time.

WFIP Stage II defines management actions required in response to a changing fire situation as indicated by monitoring information and the Periodic Fire Assessment completed as part of Stage I. Stage II is used to manage larger, more active fires with greater potential for geographic extent than in Stage I. Under suitable circumstances and fire situation, this stage could represent the end point in WFIP planning and be used to manage a fire through its duration. Components of the WFIP Stage II include:

- Objectives
- Fire Situation
  - Current and predicted fire behavior
  - Current and predicted weather
  - Threats
  - Safety considerations
  - Environmental concerns
  - External concerns
- Management actions (include description of action and expected duration)
- Estimated costs
- Periodic fire assessment. Completing this step in Stage II provides direction to move to Stage III, remain with Stage II, or initiate a suppression response.

WFIP Stage III defines management actions required in response to an escalating fire situation, potential long duration, and increased need for management activity, as indicated by the Periodic Fire Assessment completed as part of Stage II. It addresses management objectives and constraints in detail, describes the maximum area that the fire may be managed within (Maximum Manageable Area), identifies foreseeable threats and concerns, provides a quantitative long-term risk assessment, identifies management actions to mitigate or eliminate threats, provides cost estimates, and documents a periodic assessment of the situation. This stage constitutes a substantial planning effort but some of the information used in this stage can be pre-planned or completed prior to fire ignition if the administrative unit desires to do so. Such pre-planning is strongly encouraged. Additional information on pre-planning is provided in Appendix B.

Components of the WFIP Stage III include:

- Objectives and Risk Assessment Considerations
  - Natural and Cultural resource objectives
  - Management Constraints
- Maximum Manageable Area (MMA) Definition and Maps
- Weather Conditions and Drought Prognosis
- Long-Term Risk Assessment (describe techniques and outputs, include maps as appropriate)
- Threats
  - MMA
  - Public Use and Firefighter Safety
  - Smoke dispersion and effects
  - Other
- Monitoring Actions (actions, frequency, and duration)
- Mitigation Actions (describe management actions, management action points that initiate these actions, and key to map if necessary)
- Resources needed to manage the fire
- Contingency Actions (describe actions necessary when mitigation actions are unsuccessful)
- Information Plan
- Estimated costs
- Post-burn evaluation
- Signatures and Date
- Periodic Fire Assessment

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

## Minimum Planning and Implementation Qualifications

The following table (Table 1) shows the minimum interagency qualification requirements for planning and implementation at each stage of the WFIP process.

**Table 1.** WFIP planning and implementation minimum qualifications.

WFIP Stage	Minimum Planning Qualifications	Minimum Implementation Qualifications (Use Fire Use Manager Decision Chart to determine recommended position)
WFIP Stage I	Unit Duty Officer	Incident Commander Type 4 (ICT4)
WFIP Stage II	Fire Use Manager Type 2 (FUM2)	Fire Use Manager Type 2 (FUM2)

Deleted: ¶  
¶  
¶

Inserted: ¶  
¶  
¶

**Comment:** If we even suggest an agency can have their own level qualifications than we are not being consistent with the Implementation Strategy to do things the same, and open the door for someone to make it different. I would dump this statement.

**Deleted:** Agencies or individual units may choose to require higher qualification levels.

WFIP Stage III	Fire Use Manager Type 2 (FUM2)	Fire Use Manager Type 2 (FUM2)
----------------	-----------------------------------	-----------------------------------

The determination of the appropriate level of implementation qualifications is made through the Wildland Fire Use Management Assessment, Part 2: Fire Use Manager Decision Chart (See Wildland Fire Management Assessment, WFIP Stage I, Periodic Fire Assessment). Duty Officer qualifications are defined in local unit operating plans.



# Wildland Fire Implementation Plan Completion Timeframes

Specific completion timeframes have been established for each stage of the WFIP. The following table shows maximum completion timeframes for WFU planning tasks.

**Table 2.** WFIP completion timeframes.

WFIP Stage	Maximum Completion Timeframe
WFIP Stage I	8 hours after confirmed fire detection and Strategic Fire Size-Up
WFIP Stage II	48 hours after need indicated by Planning Needs Assessment
WFIP Stage III	7 days after need indicated by Planning Needs Assessment
Periodic Fire Assessment	As part of all stages and on assigned frequency thereafter

**Deleted:** ¶  
¶

**Inserted:** ¶  
¶

**Comment:** If we even suggest an agency can have their own level qualifications than we are not being consistent with the Implementation Strategy to do things the same, and open the door for someone to make it different. I would dump this statement.

**Deleted:** Agencies or individual units may choose to require higher qualification levels.

# Chapter 3. Detailed Description - Wildland Fire Implementation Plan Procedures

## Wildland Fire Implementation Plan - Stage I

Formatted: Bullets and Numbering

<b>Use:</b>	Documents the fire situation and Agency Administrator decision, describes management actions, and sets the initial periodic assessment schedule as a primary stage of the planning process.
<b>Information Source:</b>	Fire size-up information, current fire weather and fuel moisture conditions, local information, Agency Administrator input, and site-specific information from the <a href="#">Fire Implementation Plan (FIP)</a> .
<b>Completion Time:</b>	The Strategic Fire Size-Up is completed as soon as aerial or on-the-ground resources provide a confirmation of the fire's existence and the required fire size-up information.  All remaining Stage I components completed within 8 hours of completion of Strategic Fire Size-Up.

The WFIP Stage I establishes the information base for managing the fire. It documents the current and predicted situation, documents all appropriate administrative information, and aids managers by providing them with information to make an initial decision to continue management of the fire for resource benefits or to take suppression action. It also allows the manager to select and document a recommended response action. Stage I consists of four specific components: Strategic Fire Size-Up, Decision Criteria Checklist, Management Actions, and Periodic Fire Assessment (an element of all stages). The information shown in the box to the right illustrates all WFIP Stage I elements. The four Stage I components are described in detail in the following sections. Completion of this stage is determined by the Periodic Fire Assessment indicating Stage II is needed, the Agency Administrator directing it to be completed, or the objectives being accomplished with no further need to advance through planning stages. A sample plan is included in Appendix A and an electronic software package for WFIP preparation is available.

- WFIP Stage I Content**
- Strategic Fire Size-Up
    - Fire name
    - Fire number
    - Administrative unit(s)
    - Start date/time
    - Discovery date/time
    - Current size
    - Fuel model(s)
    - Current weather
    - Observed fire behavior
    - Location
      - FMU
      - Cause
  - Decision Criteria Checklist
  - Management Actions
    - Forecasted weather
    - Forecasted fire behavior
    - Hazards and Safety concerns
    - Management Actions
    - Availability of resources
  - Periodic Fire Assessment

Formatted: Bulleted + Level: 1 + Aligned at: 0" + Tab after: 0.25" + Indent at: 0.25"

Formatted: Font: (Default)Tahoma

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: 0", List tab + Not at 0.5"

Deleted: ¶  
Fire Management Unit (FMU)

Deleted: Current

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: 0", List tab + Not at 0.5"

Formatted: Bulleted + Level: 1 + Aligned at: 0" + Tab after: 0.25" + Indent at: 0.25"

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: Not at 0"

Formatted: Indent: Left: 0.25", Bulleted + Level: 1 + Aligned at: 0.75" + Tab after: 0.5" + Indent at: 1", Tabs: Not at 0"

Formatted: Bulleted + Level: 1 + Aligned at: 0" + Tab after: 0.25" + Indent at: 0.25"

## Strategic Fire Size-Up:

All reported wildland fires receive a size-up. The Strategic Fire Size-Up consists of a standard information set (refer to Incident Response Pocket Guide or Interagency Standards for Fire and Fire Aviation Operations or locally developed operating guidelines and forms) needed for the Duty Officer to determine if the fire meets the requirements for WFU management. The Duty Officer is responsible within his/her delegated authority for determining if the fire meets minimum WFU requirements and keeping the Agency Administrator informed of the situation. Two key pieces of information collected for the Strategic Fire Size-Up will help the Duty Officer make this determination. These are fire location in regard to the Fire Management Plan's Fire Management Unit and the cause of the fire. Location of the fire in an FMU not approved for wildland fire use or being human-caused is reason to initiate a suppression response. If the fire is located in an FMU approved for wildland fire use and naturally ignited, it becomes a WFU candidate and the planning process continues into the Decision Criteria Checklist. This determination is noted at the bottom of the Strategic Fire Size-Up form (Figure 2 shows that portion of the Strategic Fire Size-Up). The appropriate information is circled and the person preparing this form initials and dates after completion.

<b>FMU</b> (circle appropriate FMU situation)	WFU Approved		WFU not Approved	
	Natural Ignition		Human Caused Ignition	
<b>Cause</b> (circle fire cause)	<b>Wildland Fire Use Candidate</b> – Continue with Decision Criteria Checklist	<b>Suppression</b>	<b>Initials</b>	<b>Date/Time</b>
<b>Suitability for Wildland Fire Use</b> (circle situation, initials of person preparing, date/time)				

**Figure 2.** Location, cause, and WFU suitability portions of Strategic Fire Size-Up.

## Decision Criteria Checklist

The Decision Criteria Checklist consists of three sections: Decision Elements, Recommended Response Action, and Justification for Suppression Response (Figure 3). The Decision Elements are five questions the Agency Administrator must answer. This process allows the Agency Administrator to gain better situational awareness and helps evaluate if the current wildland fire should be managed under a WFU response. These questions assess threats from the fire, potential effects of the fire, risk from the fire, effects of other fire activity on management capability, and allow the Agency Administrator to consider external or other unanticipated issues.

To complete the checklist, the Agency Administrator answers the decision elements, based on input from his/her staff, and determines if the fire should receive a WFU management response or a suppression response. **A "Yes" response to any of the five elements indicates that management should take a suppression response. All "No" answers to the decision elements indicate that the fire is a viable candidate to be managed as a WFU.**

### Detailed Explanations of Decision Elements:

- The first decision element involves the relative threats to life and property. If known threats cannot be adequately mitigated (i.e., "yes" answer), managing the fire as a WFU has potential concerns due to fire location, serious threats to firefighter and public safety, and potentially significant consequences.
- The second decision element involves objectives and resource conditions for wildland fire management as stated in the FMP. Potential outcomes and desired effects are closely correlated with burning conditions and fire behavior. Objectives and constraints include air quality and effects on natural and cultural resources, as applicable. References for objectives and constraints include the unit FMP, unit land management plan, and Agency Administrator input.
- The third decision element involves a relative assessment of the risk for the fire. Since the decision to suppress or manage the fire is time constrained (8 hour decision space), it may not be possible to complete a long-term risk assessment. In lieu of the quantitative long-term risk assessment, a qualitative assessment process has been developed to provide the Agency Administrator with a quick but comprehensive assessment of the relative risk of the fire. Input information for this decision element is acquired by completing the Wildland Fire Relative Risk Assessment (Figure 4). This assessment must be completed to support the Decision Criteria Checklist in Stage I, and is reevaluated during each Periodic Fire Assessment. Neither a high nor low relative risk rating necessarily predispose a

"yes" or "no" answer on the Decision Criteria Checklist. The Agency Administrator must still decide what level of risk is acceptable. A description of the Wildland Fire Relative Risk Assessment is provided in the following section (**Wildland Fire Relative Risk Assessment**).

- The fourth decision element pertains to other local and regional fire activity, commitments of unit and cooperator

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

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

Recommended Response Action (check one)	Signature/Position	Date
Suppression Response		
Wildland Fire Use Response		

Justification for Suppression Response:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Deleted:** done

**Inserted:** done

**Deleted:** (see Section ??? for detailed description of risk assessment). Use the relative risk as input information for the Decision Criteria Checklist.

**Deleted:** They provide an indication, but

**Deleted:** t

resources, specific unit FMP limitations on fire numbers, and availability to fill special skill positions from local resources for this fire. If current fire activity precludes the ability to manage fire with adequate resources and skill mixtures, then the response to this element will be "Yes" and a suppression response is indicated.

- The final decision element allows Agency Administrator discretion in the event there are other issues which were unknown to fire staff and must be considered as part of the decision to manage the fire for resource benefits. Agency Administrators will document other issues that precluded management of the fire for resource benefits.

Once the Decision Criteria Checklist is complete, the Agency Administrator decides whether to initiate actions to manage the fire as a WFU or manage it under a suppression response. At the bottom of the Decision Criteria Checklist is a check box for the recommended response action followed by the Agency Administrator's (or other delegated individual's) signature and date. If a suppression response is selected, the Agency Administrator

must include a justification for this selection at the bottom of the page

**Figure 3.** Decision Criteria Checklist (a standard size reproducible copy of the checklist is included in

### **Wildland Fire Relative Risk Assessment**

The Federal Fire Policy requires that sound risk management be a foundation for all fire management activities. Recent reviews and audits have also stressed the need for risk management. In fact, risk management is rapidly becoming a cornerstone phrase associated with fire management. A report by the National Academy of Public Administration (NAPA) (2001), "stresses the role of risk reduction in wildlands as a critical mitigation approach to improve community protection. The Government Accountability Office (USGAO 2004) completed a report on risk assessment associated with the fuel treatment program. This report also stresses the importance of risk assessment in fire and fuels management.

Using fire to meet resource objectives contains an inherent level of risk given that we are dealing with a number of unknowns and uncertainty in what the future will bring. The relative risk rating is intended to characterize the general magnitude of risks associated with implementing a wildland fire use incident at a snapshot in time. It is an attempt to qualify the level of uncertainty regarding the eventual outcomes of the fire in relation to the management objectives and other mandates. The relative risk rating is a direct input into the decision criteria checklist, wildland fire use management assessment, and periodic fire assessment.

The Wildland Fire Relative Risk Assessment provides the Agency Administrator with a quick but comprehensive assessment of the relative risk of the fire. This is a qualitative process that can be completed in less time than a quantitative long-term risk assessment. The relative risk rating produced from this assessment is a decision

support aid for the Agency Administrator in answering the Decision Criteria Checklist elements and during the Periodic Fire Assessment.

The relative risk assessment chart uses three risk components: values, hazard, and probability. Each of these components is assessed in an independent step. Then, the three outputs are evaluated in a final step that provides the relative risk for the fire. Each risk component is defined by three variables. One variable is located on the right and one on the left side of the box and the third variable is defined by three interior lines extending from top to bottom (Figure 4).

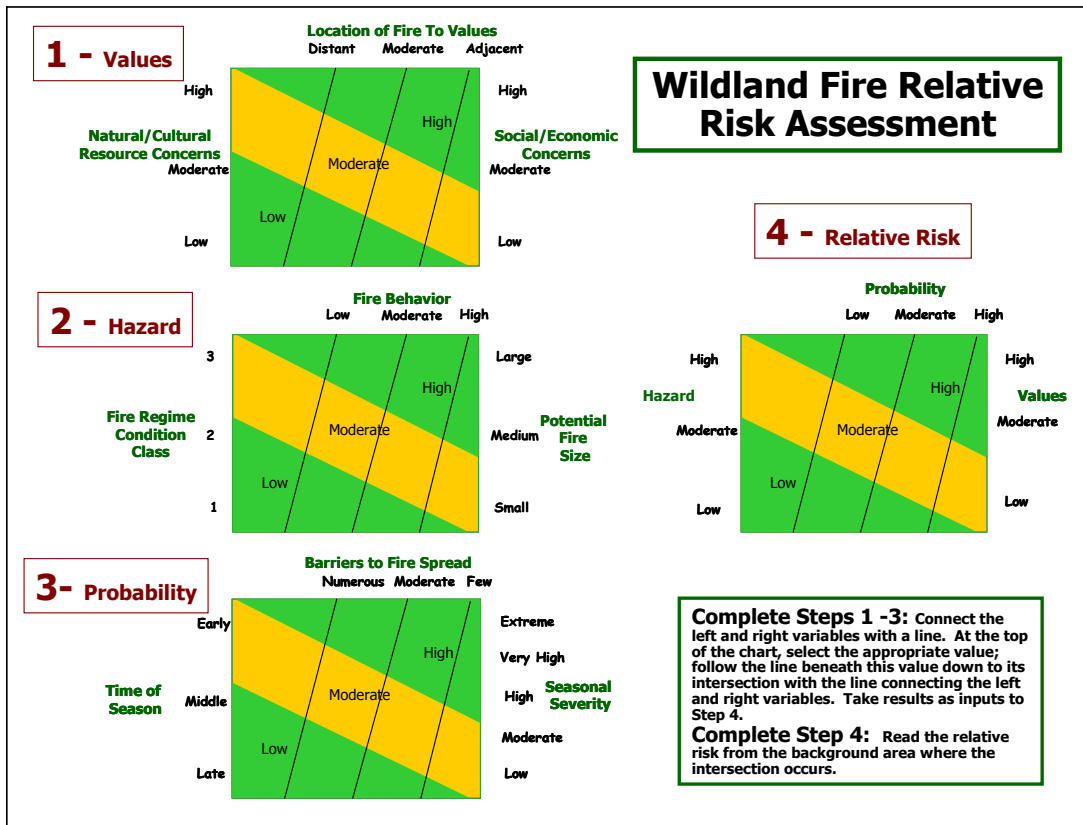
Deleted: socio-political

**Values:** Values are those ecologic, social, and economic resources that could be lost or damaged because of a fire. Ecologic values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecologic functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities.

**Hazard:** The hazard in wildland fire is made up of the conditions under which it occurs and exists, its ability to spread and circulate, the intensity and severity it may present, and its spatial extent.

**Probability:** Probability refers to the likelihood of a fire becoming an active event with potential to adversely affect values.

The Wildland Fire Relative Risk Assessment Chart is shown in Figure 4. Four steps are necessary to complete the risk assessment. Step-by-step instructions for completing the Wildland Fire Relative Risk Assessment are included in Appendix A. While all four steps are shown in this figure, each step is available individually in a larger format figure in Appendix A.



**Figure 4.** Wildland Fire Relative Risk Assessment.

Initial information to consider in developing the rating for the individual element is provided in the following section and after each of the individual charts in the Appendix (Appendix A). This descriptive list is not all inclusive and items on the list can be expected to vary by place and time. Users are expected to exercise their judgment in determining the ratings; information is intended to provide both guidance in completion and flexibility in determining exactly what the descriptions mean. Local information can and should be amended to the lists to better reflect site-specific situations.

**PART 1: VALUE ASSESSMENT:** Values are those ecologic, social, and economic effects that could be lost or damaged because of a fire. Ecologic values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecologic functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities. This assessment area allows opportunity for the local agency administrator to identify particular local concerns. These concerns may be identified in the fire management plan or other planning documents.

Formatted: Font: (Default) Tahoma, 9 pt

Formatted: Font: (Default) Tahoma, 9 pt

**Natural/Cultural Resource Concerns** - key resources potentially affected by the fire. Examples include, but are not limited to habitat or populations of threatened, endangered, or sensitive species, water quality, erosion concerns, and invasive species.

Low	Moderate	High
Resource concerns are few and generally do not conflict with management of the fire. Mitigation measures are effective.	Significant resource concerns exist, but there is little conflict with management of the fire. Mitigation measures are generally effective.	Multiple resource concerns exist, some of which may conflict with management of the fire. The effectiveness of needed mitigation measures is not well established.

**Social/Economic Concerns** - the risk of the fire, or effects of the fire, impacting the social or economic concerns of an individual, business, community or other stakeholder involved with or affected by the fire. Social concerns may include degree of support for the Wildland Fire Use program or resulting fire effects, potential consequences to other fire management jurisdictions, impacts to tribal subsistence or gathering of natural resources, air quality regulatory requirements and public tolerance of smoke. Economic concerns may include potential financial impacts to property, business, or infrastructure. Infrastructure impacts may be costs to repair or replace sediment catchments, wildlife guzzlers, corrals, roads, culverts, power lines, domestic water supply intakes, and similar items.

Low	Moderate	High
Local support for wildland fire use is high. The fire should have little or no impact on subsistence or Tribal activities involving treaty rights. The fire is expected to remain within a single jurisdiction or agreements are in place to allow the fire to move across several jurisdictions. Media coverage is favorable. Few structures or business ventures are potentially affected by the fire. There are few impacts to recreation and tourism.	Local support of wildland fire use is clearly divided between supporters and opponents. The fire will have some impacts on subsistence or Tribal activities involving treaty rights. The fire is expected to involve more than one jurisdiction, cooperator, or special interest group and agreements need to be developed. Media coverage tends to be a mix of favorable and unfavorable views. Some structures may be threatened by the fire or some business ventures may be affected by the fire.	Local support for wildland fire use is low. The fire will have significant impacts on subsistence activities or Tribal activities involving treaty rights. Smoke impacts may become a concern for higher level air quality regulatory agencies. The fire is expected to involve several jurisdictions, cooperators, and special interest groups and agreements requiring significant negotiation need to be developed. Media coverage tends to be unfavorable. Many structures or private properties could be threatened.

**Location of Fire to Values**

Distant	Moderate	Adjacent
Fire location is not proximate to values to be protected or fire is located where it is highly unlikely that it would reach the values.	Fire location is moderately proximate to values. Location is such that, based on historical data, fire could potentially reach the values but will take multiple burning periods and sustained fire	Fire location is in close proximity to values. Without mitigation actions, fire will be expected to reach the values.



activity to reach the values.

**PART 2: HAZARD ASSESSMENT:** The hazard in wildland fire is made up of the conditions under which it occurs and exists, its ability to spread and circulate, the intensity and severity it may present, and its spatial extent.

**Current Fire Behavior** – the current fire behavior or that most recently observed. Changing fire behavior is addressed through repeated completion of the Periodic Fire Assessment.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like "conducive weather" and "alignment" in the text. This would kind of get away from the "attack" terminology also which I don't particularly like here.

Low	Moderate	High
Short duration flaming front with occasional torching. Fuels are uniform and fire behavior can be easily predicted and tactics implemented.	Short range spotting occurring. Moderate rates of spread are expected with mainly surface fire and torching. Fuels and terrain are varied but don't pose significant problems in holding actions.	Long range spotting > ¼ mile. Extreme rates of spread, and crown fire activity are possible. Fuels, elevation, and topography vary throughout the fire area creating high resistance to control.

**Fire Regime Condition Class** – a measure of ecological functions at risk based on changes in vegetation.

1	2	3
Vegetative composition and structure are resilient and key components are at low risk of loss. Few, if any, fire return intervals have been missed and fuel complexes are similar to historic levels.	Both the composition and structure of vegetation has shifted towards conditions that are less resilient and more at risk of loss. Some fire return intervals have been missed, stand structure and composition, and fuel complexes have been altered and present potential for fires of severity and intensity levels in excess of historic levels.	The highly altered composition and structure of the vegetation predisposes the landscape to fire effects well outside the range of historic variability, potentially producing changed fire environments never before measured.

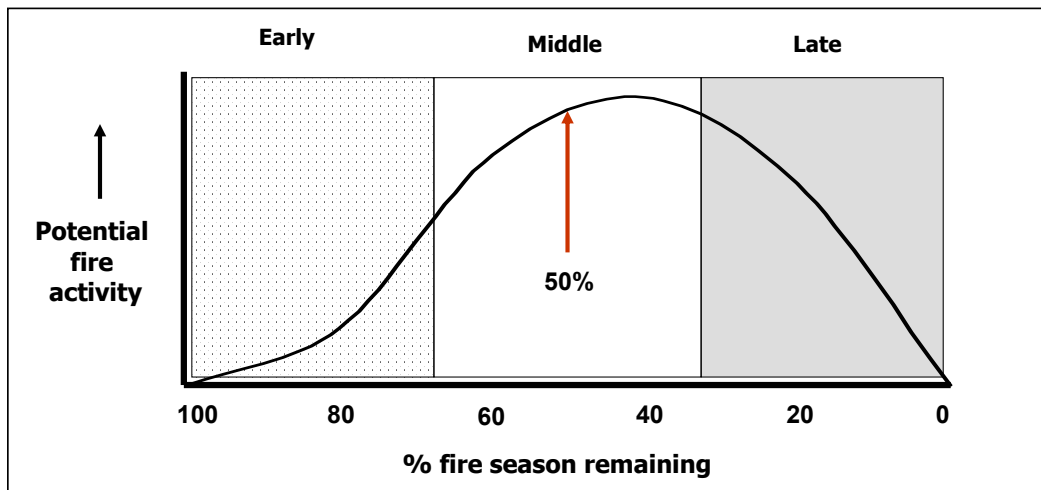
**Potential fire size** - the potential fire size by the end of the season in comparison to historical fire occurrence.

Small	Medium	Large
Fire size is expected to be small for the dominant fuel type involved	Fire size is expected to be in the mid-range for the dominant fuel type involved	Fire size is expected to be large for the dominant fuel type involved.

**PART 3: PROBABILITY ASSESSMENT:** Probability refers to the likelihood of a fire becoming an active event having potential to adversely affect values.

**Time of Season** - the current time in relation to the historical fire season. The chart below the guidelines reinforces the importance of time of season. During the early part of the fire season, the peak of burning activity is still to come, thus the fire could present substantial variation in behavior and activity. In the middle of the season, the peak of burning activity may or may not have occurred while in the late part of the season, the peak of fire activity generally has occurred and managers can reasonably expect diminishing fire activity and behavior as time progresses. As the amount of fire season remaining decreases or as the time of season progresses from early to late, management concerns and issues associated with potential fire activity decrease.

Early	Middle	Late
The current date is in the early portion of the historic fire season, at least 2/3 of the established fire season remains and the peak of burning activity is still to come.	The current date is in the middle of the historic fire season, at least 1/3 of that period has passed and no less than 1/3 remains. The peak burning activity period either has occurred, is occurring now, or will occur very soon.	The current date is in the latter part of the historic fire season. At least 2/3 of the historic period has passed, the peak burning activity period has occurred, and the probability of a season-ending or fire-ending event is increasing quickly.



**Seasonal Severity** - a measure of the potential burning conditions as expressed by factors such as ERC, drought status, live fuel moistures, dead fuels moistures, soil moisture, stream discharge, and similar types of measures.

**Comment:** Changes made to match Risk Charts

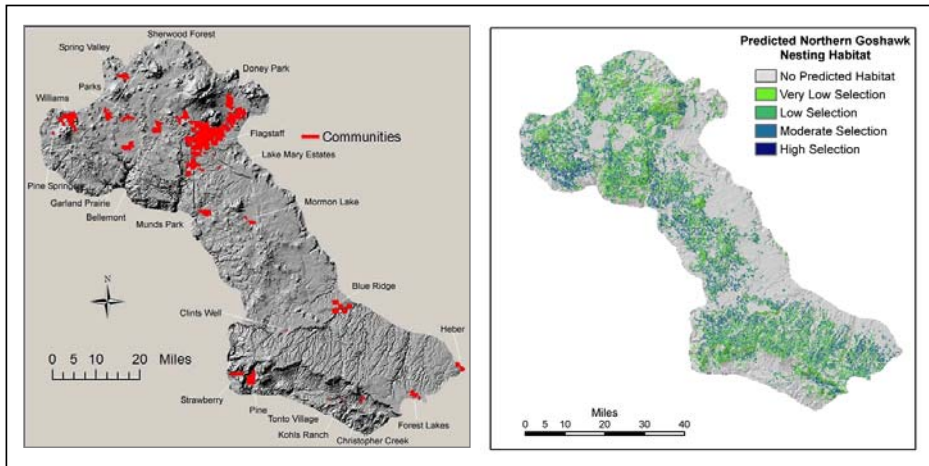
Low	High	Extreme
Measures of fire danger are below to somewhat above seasonal averages. Drought status is within seasonal norms with no long-term drought present	Measures of fire danger are well above seasonal averages but not setting new records. The area is in short-term drought (1-2 years of drought) but not considered to be in long-term drought.	Measures of fire danger are setting new records. The area is considered to be in long-term drought (3 or more years of drought).

**Barriers to Fire Spread** – a measure of the natural defensibility of the fire location and an indication of degree of potential mitigation actions needed.

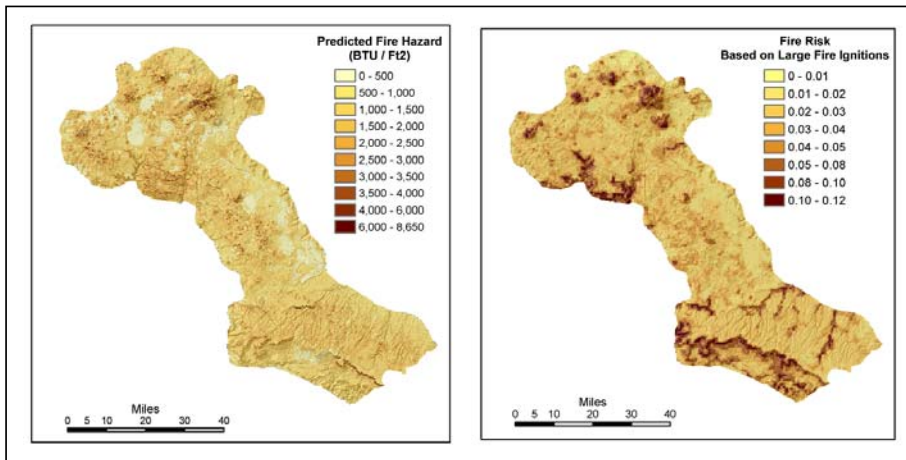
<b>Numerous</b>	<b>Moderate</b>	<b>Few</b>
The location of the fire and presence of natural barriers and fuel breaks limit the horizontal fuel continuity, minimal mitigation actions on-the-ground will be needed.	The location of the fire and presence of some natural barriers and fuel breaks limit the horizontal fuel continuity on some, but not all fire flanks, some mitigation actions on-the-ground will be needed to protect threats to boundaries and sensitive areas.	The location of the fire and presence of only limited natural barriers and fuel breaks will permit fire spread across continuous fuels. Mitigation actions on-the-ground will be needed but are expected to be effective.

## Alternative Risk Assessment Methods

If pre-planning or ongoing planning efforts lead to the development of additional mechanisms for assessing risk, these outputs can be utilized during the relative risk assessment process. Some planning analyses provide indications of values, hazards, and probability that may be used in lieu of completing Steps 1, 2, and 3 of the Relative Risk Assessment. **Step 4, determination of the risk, must be completed, regardless of how the values, hazard, and probability are determined.** Figures 5 and 6 show some examples of preplanning products that could be used for Steps 1, 2, and 3.



**Figure 5.** Geographic information system mapping outputs showing community locations and wildlife species concern areas (courtesy of ForestERA, Northern Arizona University, Flagstaff, AZ).



**Figure 6.** Geographic information system mapping outputs showing predicted fire hazard and fire risk (courtesy of ForestERA, Northern Arizona University, Flagstaff, AZ).

Mapping products like those illustrated in Figure 5 provide locations of communities, wildland-urban interface, infrastructure, natural resource concerns, etc. These maps can be used in conjunction with Fire Management Units to assess risk from fire to these values and can be directly used in the relative risk chart as levels of values for Step 1 or Step 4.

In Figure 6, fire hazard can be used to evaluate the hazard portion of the relative risk and fire risk could be an indicator of probability. These data can be used in conjunction with Fire Management Unit information to assess the hazard and probability and can be directly used in the relative risk chart as levels of hazard and probability in Step 2, 3, and/or 4.

There are numerous other methods that can be used to help evaluate the relative risk. If an alternative method is used to derive the value, hazard, and probability, that method must be documented on the relative risk rating charts.

### **Management Actions**

Deleted: 7

The Management Actions describe activities necessary to manage the fire until the Periodic Fire Assessment indicates a change in WFIP planning stage and activity is required or until objectives are achieved. Management Actions will include monitoring and other actions as appropriate. Monitoring actions are important components of Stage I Management Actions. Monitoring Actions are necessary to track fire movement, fire activity, fire effects, and to provide information vital to completing the Wildland Fire Use Management Assessment. Management Actions should be designed to safely achieve the wildland fire use objectives as detailed in the Fire Management Plan, and be based upon the fire situation and forecasted weather and fire behavior.

Deleted: 1

## Periodic Fire Assessment

<b>Use:</b>	<p><b>evaluate and document:</b></p> <ul style="list-style-type: none"> <li>▪ <b>the capability to manage the fire to meet resource benefits,</b></li> <li>▪ <b>relative risk,</b></li> <li>▪ <b>management organization, operational, and personnel qualification needs; and</b></li> <li>▪ <b>the WFIP planning level required to meet identified needs.</b></li> </ul> <p>Periodic Fire Assessment is completed on a set schedule in conjunction with WFIP Stages.</p>
<b>Information Source:</b>	Monitoring information, risk assessment results, current fire activity, fire size, fire danger indicators, time period of fire season, fire behavior forecasts, and Agency Administrator and staff input.
<b>Estimated Completion Time:</b>	four

For each wildland fire use action, the Agency Administrator (or delegated individual) is required to initially affirm and periodically reaffirm the capability to manage the fire as a WFU event. This process is intended to document and ensure management accountability throughout the duration of the wildland fire use. The Periodic Fire Assessment process:

<p><b>Periodic Fire Assessment:</b></p> <ul style="list-style-type: none"> <li>❑ Decision Criteria Checklist</li> <li>❑ Wildland Fire Relative Risk Assessment</li> <li>❑ Wildland Fire Use Management Assessment</li> </ul> <p>Part 1: Planning Needs</p>
--

- affirms continued management of the fire to meet resource objectives or provides rationale for conversion to a suppression response.
- confirms and documents the decision to establish, remain at, or move up, to the next Stage of planning.
- validates the minimum planning and implementation qualifications.

The Periodic Fire Assessment accomplishes the above-stated purposes by:

- completing a Decision Criteria Checklist (either by reaffirming the Decision Criteria Checklist completed in the previous stage or through completion of a new one),
- assessing the level of risk the fire presents using the Wildland Fire Relative Risk Assessment Process (either by reaffirming the Wildland Fire Risk Assessment completed in the previous stage or through completion of a new one),

- assessing the planning needs of the unit,
- assessing the minimum planning and implementation qualifications for each stage of the WFIP,
- completing a signature table that affirms the Agency Administrator's concurrence to manage the fire for resource benefits and at a particular Stage.

The initial Periodic Fire Assessment is completed as part of the WFIP Stage I. It is then re-done on the recurring timeframe set by the Assessment Frequency.

### **Decision Criteria Checklist**

The Decision Criteria Checklist completed in Stage I or during the most recent Periodic Fire Assessment is reviewed for continued validity. The validity of the Checklist is noted on the Periodic Fire Assessment Signature Page. If the Decision Criteria Checklist is no longer valid, management of the fire for resource benefits can no longer continue. See WFIP Stage I Decision Criteria Checklist procedures for a description of the Decision Criteria Checklist and an example form.

### **Wildland Fire Relative Risk Assessment**

The Wildland Fire Relative Risk Assessment, completed during Stage I or during the most recent Periodic Fire Assessment, is reviewed and updated to remain current and ensure validity. **It is important that this assessment be reviewed and updated as conditions change over time (this review and update is required in the Periodic Fire Assessment).** See WFIP Stage I Wildland Fire Relative Risk Assessment procedures for a description of the Wildland Fire Relative Risk Assessment and example forms.

### **Wildland Fire Use Management Assessment**

The Wildland Fire Use Management Assessment consists of two parts:

- Part 1: Planning Needs Assessment Chart,
- Part 2: Fire Use Manager Decision Chart

This section is completed to determine if the level of planning and management capability and qualifications are commensurate with the fire activity and management capability.

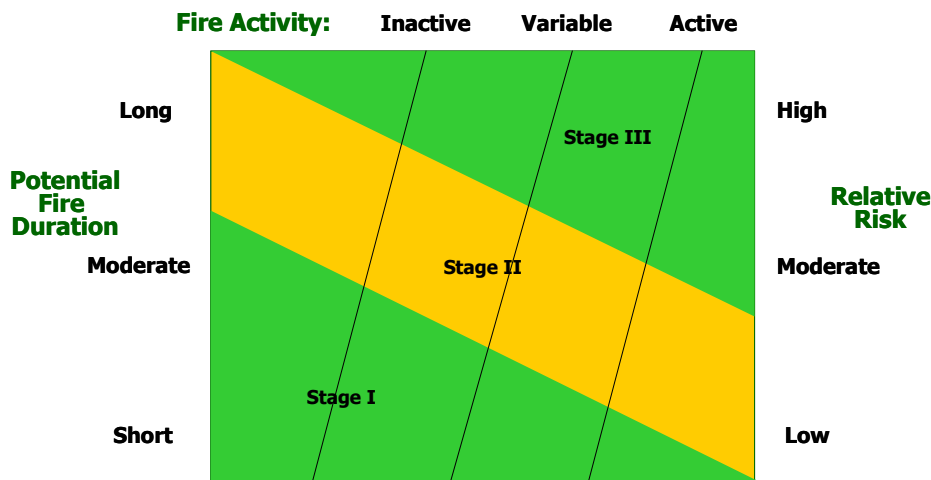
#### **Part 1: Planning Needs Assessment Chart**

The Planning Needs Assessment Chart is used to determine the level of planning commensurate with the relative risk, potential fire duration, and fire activity. The Planning Needs Assessment Chart indicates the need to establish, remain at, or to move up to the next stage of planning and is the principle guide for transition

throughout the WFIP process. This chart aids managers in assessing the need to complete detailed, long-term assessment and implementation plans for a particular fire. The chart also guides agency administrators in setting priorities for planning needs for multiple fires and ensuring that those fires having the greatest need have the necessary planning done within the framework of management capabilities and time constraints. It must be noted that agency administrators and staff have the prerogative to move to and complete the next or all WFIP Stage(s) for any or all wildland fires at any time. The Planning Needs Assessment Chart is shown in Figure 7.

**Part 2: Fire Use Manager Decision Chart**

The Fire Use Manager Decision Chart is used during each Stage as part of the Periodic Fire Assessment. This chart aids the Agency Administrator in determining the appropriate qualification levels for implementation of management actions. The Fire Use Manager Decision Chart is shown in Figure 8.

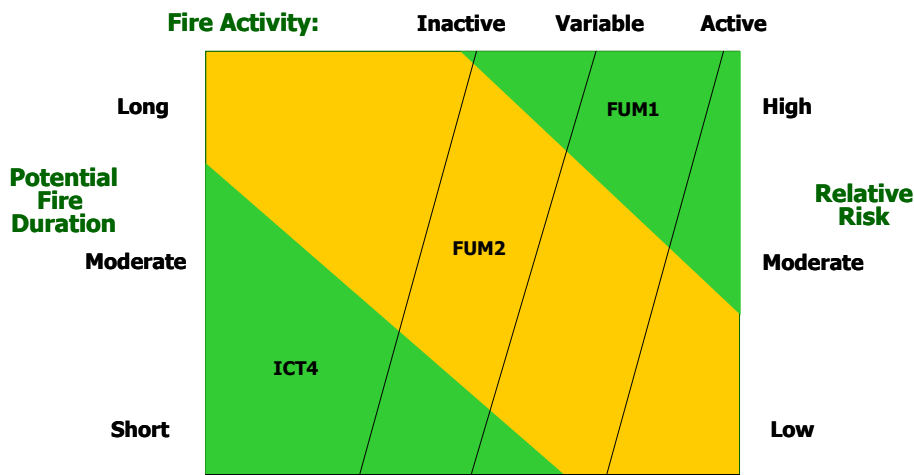


**Figure 7.** Planning Needs Assessment Chart.

To complete the chart in Figure 7, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its



intersection with the line connecting the left and right variables. Read the planning need from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process described above.



**Figure 8.** Fire Use Manager Decision Chart.

To complete the chart in Figure 8, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its intersection with the line connecting the left and right variables. Read the level of Fire Use Manager needed directly from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process.

Initial information to consider in selecting the value for each variable is provided in the following section and after each of the individual charts in the Appendix (Appendix A). This list is not all inclusive and items on the list can be expected to vary by place and time. Users are expected to exercise their judgment in selecting the values; information is intended to provide both guidance in completion and flexibility in determining exactly what the descriptions mean. **Local information can and should be amended to the lists to better reflect site-specific situations.**

**Guidelines for Planning Needs Assessment Chart and Fire Use Manager Decision Chart (while the charts are different and used for different purposes, the input values are the same and the following information applies to both charts).**

**Potential Fire Duration** – the estimated length of time that the fire may continue to burn in comparison to historical fire durations and amount of fire season available for a given area.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like “conducive weather” and “alignment” in the text. This would kind of get away from the “attack” terminology also which I don’t particularly like here.

Short	Moderate	Long
<p>Fire is expected to persist for only the shortest time in comparison to historical fire durations. This may be as short as only a few days. Fuels may be limiting, weather may be limiting, or time of fire season may be limiting. Generally, this could be referenced as less than the historical average fire length for a given area.</p>	<p>Fire is expected to last for a time period similar to the historical average length of fires.</p>	<p>Fire is expected to last for a time period longer than the historical average length of fires.</p>

**Relative Risk** – a measure of the relative risk, determined directly from the Wildland Fire Relative Risk Assessment, so no range of values is listed here.

**Fire Activity** - the relative activity of the fire in terms of intensity and spread over time.

Inactive	Variable	Active
<p>Fire is burning with very low intensity and little or no spread and little or no increase in burned area. Fire is confined to surface litter and duff layers.</p>	<p>Fire is burning predominantly in surface litter and duff layers, with low intensity and little or no spread but has occasional periods of increased intensity and spread. Growth of burned area is not constant but occurs in response to increased activity. Area increase may be static for moderately long periods and then increase for short periods. Fire size usually increases by less than 50% during active periods.</p>	<p>Fire is burning in all fuel strata (litter, surface, and crown) with periods of sustained flaming fronts, perimeter growth, and area increases that can exceed 100% at times. Infrequent periods of low activity occur but spread is generally constant.</p>

## Signature Table

Local fire staff review and complete the assessments and checklist. Once these forms are completed they are taken to the Agency Administrator (or his/her designee) and **must be reviewed and confirmed on the specified assessment frequency.**

On the Signature Table, the following must be completed:

- Assessment Frequency,
- Valid Date(s),
- Signatures
- Date
- Confirmation of Decision Criteria Checklist
- Validation of WFIP Planning Stage
- Confirmation of Fire Use Manager level.

## Assessment Frequency and Valid Dates

The assessment frequency is how often the assessment will be reviewed. This frequency can be daily, but each unit can determine the appropriate assessment frequency. It can be less frequent than a daily requirement.

The frequency for completing the Periodic Fire Assessment is established based on the current and expected fire and weather situation. When units set a monitoring and assessment frequency, they should consider developing a "step-up" frequency based on levels of fire activity, external attention and influences, or other critical concerns. Then, as situational concerns escalate, the monitoring and assessment frequency can correspondingly increase. Conversely, as the situational demands lessen, monitoring and assessment can "step-down" and become less frequent. **Units must identify standards and rationale for establishing assessment frequency, especially "step-up" and "step-down" actions.**

The valid dates reflect the length of time that the identified assessment frequency will be used. If the assessment frequency is changed, the valid dates must be changed accordingly.

## Signatures/Delegation

The Agency Administrator or designated individual must sign the Periodic Fire Assessment Signature Page in conformance with the specified assessment frequency. The Periodic Fire Assessment signature authority can be re-delegated to specific positions as allowed by Agency Policy.

When re-delegation occurs, Agency Administrators must document, in writing, the revalidation authority to the designated individuals. This permits the delegated individual to validate that management capability is adequate to continue management of the fire for resource benefit. If or when fire conditions or complexity levels escalate, Periodic Fire Assessment signature authority will automatically and immediately revert to the Agency Administrator who made the initial delegation of authority.




## Wildland Fire Management Plan - Stage II:

<b>se:</b>	<b>nents specific management objectives, describes the Fire Situation, identifies management concerns, identifies management actions, estimates costs, and documents the Periodic Fire Assessment.</b>
<b>Information Source:</b>	<p>Management actions = developed from staff input and Fire Management Plan.</p> <p>Fire Situation = information available from monitoring the fire, weather observations, and weather forecasts.</p> <p>Periodic Fire Assessment = the minimum risk assessment required is the output from the periodic fire relative risk assessment completed in the Periodic Fire Assessment.</p> <p>Management actions = developed from staff input commensurate with predicted fire behavior, risk assessment, fuel types, fuel continuity, overall objectives, and identified management concerns.</p> <p>Estimated Costs = developed from staff input, based on identified management actions and resources needed.</p>
<b>Completion Time:</b>	Components of WFIP Stage II must be completed within 48 hours of need as indicated in the Periodic Fire Assessment.

The WFIP Stage II represents the continuation of management for resource benefits. During this stage, objectives are clearly defined, the Fire Situation is described, Management Actions commensurate with the Fire Situation are established, Cost Estimates are prepared, and the Periodic Fire Assessment is continued to evaluate the need to move to the WFIP Stage III.

Components of the WFIP Stage II and output products are shown in the box to the right.

<p>WFIP Stage II:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Objectives</li> <li><input type="checkbox"/> Fire Situation <ul style="list-style-type: none"> <li><input type="checkbox"/> Current and predicted weather</li> <li><input type="checkbox"/> Current and predicted fire behavior</li> <li><input type="checkbox"/> Threats</li> <li><input type="checkbox"/> Safety considerations</li> <li><input type="checkbox"/> Environmental concerns</li> <li><input type="checkbox"/> External concerns</li> </ul> </li> <li><input type="checkbox"/> Management actions (include description of action and expected duration)</li> <li><input type="checkbox"/> Estimated costs</li> <li><input type="checkbox"/> Periodic fire assessment</li> </ul>
---

Completion of this stage is determined by the Periodic Fire Assessment indicating Stage III is needed, the Agency Administrator directing it to be completed, or the objectives being accomplished with no further need to advance through planning stages.

## ***Objectives***

Land management is the process of making land-use decisions for the future, setting objectives, implementing the actions to accomplish objectives, achieving outputs, and performing evaluations which compare results to objectives. In land management programs, objectives are used to establish desired outcomes for management actions. Objectives represent the single most influential factor in land management program implementation. They are fundamental to successful management to achieve desired land-use decision conditions.

In wildland fire use, goals and objectives are important. Goals are primary basic products of the long range management plans commonly referred to as land-use decisions. They deal with large areas and long time periods. Land-use decisions establish resource condition objectives; allowable, limited, or excluded uses for an area and the term and conditions for such use; and recommend management actions to achieve desired conditions. Objectives, a necessary component of the planning process, provide a bridge between goals and implementation actions. They identify changes resulting from management actions that move from the current situation to a desired situation. Site-specific treatment objectives must be developed to guide project-level operations in wildland fire use. These are very well-defined statements that describe what one or more wildland fires must accomplish to meet resource management objectives, as stated in land and resource management plans.

Objectives defined in WFIP Stage II represent specific statements of accomplishments for wildland fire use and provide a link back to Fire Management Plans and Land and Resource Management Plans. These objectives must be specific, measurable, achievable, relevant, and trackable. At the Stage II planning level, more detailed tactical implementation of strategic objectives for wildland fire use activities takes place. At this level, the WFIP Stage II is a site-specific plan to guide implementation of fire management activities on the ground. Objectives are formulated from local unit input, Agency Administrator direction, Fire Management Plans, and Land and Resource Management Plans.

## ***Fire Situation***

The Fire Situation section describes what the current conditions surrounding the fire are and includes the following:

- Current and predicted weather
- Current and predicted fire behavior (predictions are vital to initial implementation actions because they provide:
  - estimates of fire size and shape at a given time,
  - models of management alternatives,
  - determinations of resource needs, production rates, and requirements,



- placement of resources,
- estimates of behavior under differential weather patterns,
- estimates of ignition patterns, including spotting,
- modeling for contingency action planning,
- developing prescriptions through historical weather records,
- verifying prediction outputs
- Threats
- Safety considerations
- Environmental concerns
- External concerns

The sum total of these efforts will be information on those factors affecting the fire and how it will burn and what it may affect. This information will support decisions on management actions, resource needs, and overall strategy and tactics concerning the appropriate management response.

Risk assessment during this stage can be quickly assessed through the Wildland Fire Relative Risk Assessment Chart during the Periodic Fire Assessment. However, if the unit has the capability to complete full long-term risk assessments through the use of the Rare Event Risk Assessment Process (RERAP), Fire Area Simulator (FARSITE), or other quantitative methods, they are encouraged to do so. This will provide the best information available. In the event such quantitative methods cannot be completed in a timely manner, the wildland fire relative risk assessment can be used to obtain a subjective assessment of the risk. The Stage II Fire Situation can be updated as the current and forecasted weather and other situational factors change.

### ***Management Actions***

The Stage II planning level represents an escalation of both planning and operational actions over those needed for WFIP Stage I implementation. Management Actions in this stage can vary significantly, depending upon specific circumstances of the particular fire. In cases where the fire may be fuel-limited, surrounded by sparse fuels or natural barriers with limited spread potential in relation to values at risk, monitoring may be specified as the predominant implementation actions. Monitoring is necessary to track fire movement, fire activity, fire effects, and to provide information vital to completing the Wildland Fire Use Management Assessment. In other cases, monitoring plus some form of mitigation actions may be necessary. In still other cases, fuel types in which the fire is burning may require immediate actions to delay, direct, or check the spread of fire on one or more flanks. WFIP Stage II [Management Actions should be designed to safely achieve the wildland fire use objectives as detailed in the Fire Management Plan and be based upon the fire situation and forecasted weather and fire behavior.](#) [These actions](#) represent operational activities and [resources needed to](#) accomplish those activities [until](#) monitoring information or the Periodic Fire Assessment indicates a change in management planning and actions is required.

Deleted: 1

## ***Estimated Costs***

Cost Estimates developed in this stage represent projections of expenditures using the resources identified to accomplish the management actions and assume no escalation to Stage III. If the planning needs transition to Stage III, new Cost Estimates that reflect a new set of management actions and a firefighting resource mix will be prepared.

## ***Periodic Fire Assessment***

Once Stage II is completed, the Periodic Fire Assessment must be completed. The process can be continued from Stage I but the Signature Page must clearly reflect the change in "WFIP Planning Stage Required" from Stage I to Stage II. The Agency Administrator (or delegated individual) is required to periodically verify the capability to continue management of the fire as a WFU event. This process documents and ensures management accountability throughout the duration of the wildland fire use event.

The Periodic Fire Assessment consists of the same elements as described for WFIP Stage I (See WFIP Stage I Periodic Fire Assessment description for more information). These include:

- Decision Criteria Checklist
- Wildland Fire Relative Risk Assessment
- Wildland Fire Use Management Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page

# Wildland Fire Implementation Plan - Stage III:

<b>Objective:</b>	<p>Stage III represents the completion of planning necessary to direct long-term implementation and successfully accomplish the desired objectives. The WFIP has been progressively developed throughout all stages; this represents the final stage. It presents detailed strategic and tactical implementation information and will be attached to information developed in previous stages.</p> <p>Stage III of the Wildland Fire Implementation Plan must be completed within 7 days from when the Periodic Fire Assessment indicates the need. The Agency Administrator can direct it to be completed before the Periodic Fire Assessment does.</p>
<b>Information Source:</b>	<p>Expertise, experience, knowledge, maps, monitoring data, fire behavior prediction, assessment, and operational evaluation and identification of tactics and resources: staff negotiated and developed from objectives, maps, on-the-ground evaluation, observation, monitoring, or as set by the FMP.</p>

This stage represents completion of planning necessary to direct long-term implementation and successfully accomplish the desired objectives. The WFIP has been progressively developed throughout all stages; this represents the final stage. It presents detailed strategic and tactical implementation information and will be attached to information developed in previous stages.

Stage III consists of the information shown in the box to the right.

This stage details operational activities and documents the planning completed to ensure adequate mitigation actions have been developed to reduce or eliminate threats to values. These actions should

- WFIP Stage III:**

  - Objectives and Risk Assessment Considerations
    - Natural and Cultural resource objectives
      - Constraints
  - MMA Definition and Maps
  - Weather Conditions and Drought Prognosis
  - Long-Term Risk Assessment (describe techniques and outputs, include maps as appropriate)
  - Threats
    - MMA
    - Public Use and Firefighter Safety
    - Smoke dispersion and effects
    - Other Resources
  - Monitoring Actions (actions, frequency, and duration)
  - Mitigation Actions (describe holding actions, management action points that initiate these actions, and key to map if necessary)
  - Resources needed to manage the fire
  - Contingency Actions (describe actions necessary when mitigation actions are unsuccessful)
  - Information Plan
  - Estimated costs of long-term implementation actions
  - Post-burn evaluation
  - Signatures and Date
  - Periodic Fire Assessment

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

reduce the probability that fire behavior or fire effects will exceed acceptable limits.

## ***Objectives***

Objectives defined in WFIP Stage III represent site-specific statements of accomplishments for wildland fire use and provide a link back to Fire Management Plans and land use plans. These are very well-defined statements that describe what one or more wildland fires must accomplish to meet resource management objectives. They should be specific, measurable, achievable, related/relevant, and trackable. At the Stage III level, the most detailed tactical implementation of strategic objectives for wildland fire use activities takes place. At this level, the WFIP Stage III is a very detailed operational plan to guide implementation of fire management activities on the ground over potentially longer durations than in Stage I or II. Objectives will be formulated from local unit input, Agency Administrator direction, Fire Management Plans, and Land and Resource Management Plans.

## ***Maximum Manageable Area (MMA) Determination***

All wildland fires being managed under appropriate management response strategies identified in a WFIP Stage III will have a defined MMA. The MMA delineates the geographic limits of the fire area as defined by the capability of management actions to meet resource objectives and mitigate risk for a given wildland fire managed for resource benefits. It represents an important tool in the planning process and serves as a planning reference and not as a rigid prescription element. It is based primarily on natural defensibility and facilitates identification of threats to a management boundary and threats to values within and adjacent to that boundary. It provides a planning basis for risk assessment analyses. It provides for closely directed fire management application in a specific area defined by resource objectives, fire and weather prescription elements, social concerns, political considerations, and management capability.

Maximum Manageable Areas have the following attributes:

- All MMAs are developed from pre-determined areas identified in the Fire Management Plan or during the preparation of Stage III of the Wildland Fire Implementation Plan.
- All MMAs serve as a definition of geographic limits of management capability to meet resource objectives and accommodate the social, political, and resource impacts for all wildland fires managed to meet resource objectives.

← --- Formatted: Bullets and Numbering

- A fire exceeding the MMA does not require an automatic change to a different strategy. There will be cases where a change in strategy from Wildland Fire Use to Wildfire Suppression and the formal implementation of the WFSA process because a wildland fire use event exceeded an established MMA is not prudent or logical. In these situations, experience may indicate that the MMA will be exceeded by the specific wildland fire on a very small or non-threatening scale. Management options in this situation include:
  - ❖ Constraining the fire spread to the small or non-threatening overrun of the original acceptable area using whatever resources are available to deal with the situation. Containment must be accomplished within 48 hours of the end of that burning period, or the fire must be converted to a wildfire accompanied by a WFSA. If containment is successful, management of the fire as a WFU will continue. If the fire is converted to a wildfire, no further acreage gain may be attributed to Wildland Fire Use.
  - ❖ In the case of spotting, any spot occurring outside the MMA from a naturally-ignited fire inside the MMA managed for resource benefits is considered as a natural process and may be treated as a separate fire available to be managed as a WFU. The appropriate management action for this new ignition will be determined separately from the original wildland fire, based on criteria specific to this fire.
- If the Agency Administrator and Fire Management Officer determine that the fire cannot continue to be managed within its original approved boundary, it will be declared a wildfire and a WFSA will be utilized to select a new strategic alternative and appropriate management response.
- An MMA cannot be changed solely on the basis of spread of a single fire toward the MMA in the absence of an imminent season ending event. This type of activity must be anticipated and addressed in the threats and mitigation actions sections of the WFIP Stage III.
- The MMA can be changed to accommodate changes in the management situation. These changes include, but are not limited to, the occurrence of new ignitions managed for resource benefits inside the existing the MMA, the occurrence of new fires within and adjacent to the MMA or outside and in close proximity to the existing MMA, the need to prepare a new WFIP based on changing situation and fire duration, a forthcoming season ending event, etc

### ***Weather Conditions and Drought Prognosis***

A discussion of current weather conditions and trends in comparison to historical records provides insight into the relative severity of the current situation, reinforces fire danger indicators, and supports decision making. A review of the drought situation

provides additional support to fire danger indicators and supports current and future decisions. This information is available from historical weather records, climatological reviews, research information, wildland fire assessment tools, and National Weather Service archives. Information presented here is valuable in further defining the hazard posed by the specific fire(s) being managed. Kinds of information useful for this discussion include, but are not limited to:

- Historical weather trends and patterns
- General wind patterns
- Historical wind direction analyses
- Climatological probabilities
- Historical length of fire season
- Severity of the current season and comparison with other significant fire years
- Seasonal drought outlook
- Precipitation probability over defined time periods

### ***Long-Term Risk Assessment***

Decision-making associated with managing wildland fire for resource benefits can have critical impacts. Risks and uncertainties relating to wildland fire use must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity. It is important to make high quality and informed decisions. Decision-making is facilitated by factual information and prediction of outcomes or consequences of the decision. Of particular importance is the ability to assess the degree of risk presented by the particular wildland fire.

The importance of risk assessment is reinforced through the Guiding Principles from the Fire Policy and affirmed by the 2003 Implementation Strategy that state, "Sound risk management is a foundation for all fire management activities," and "Fire management plans are based on the best available science."

The qualitative process used in Stage I and the Periodic Fire Assessment affords a quick and simple way to estimate fire risk. This process is based on assessing the values, hazard, and probability from a fire. Since the decision to suppress or manage the fire is time constrained, it is not always possible to complete a quantitative long-term assessment of risk. In lieu of the quantitative long-term risk assessment, this qualitative assessment process provides the Agency Administrator with a quick and fairly comprehensive assessment of the "relative risk" of the fire

During the most detailed planning stage of the WFIP (Stage III), an assessment of the long-term risk that a particular fire may present is required. This is critical input information to ongoing management activities, development of mitigation strategies and actions, continuing support for decisions about the fire, and future implementation activities. Technological advances in fire behavior prediction, meteorological analysis, fire spread estimation, fire effects prediction, smoke production and dispersal, rare event assessment, and fire area simulation make it possible to obtain better information, reduce uncertainty, assess potential fire outcomes, evaluate consequences of failure, and determine probabilities of success more effectively than ever before. Using these techniques to gain the type of information necessary for consideration in decision-making promotes better management choices and ultimately, more desirable outcomes. As new technology becomes operationally available for application in management situations, it will be utilized to improve operational actions to the greatest degree possible. The Long-Term Risk Assessment is also based on the principles of assessing values, hazard, and probability. These three elements are not directly assessed in the risk

assessment, but pervade the entire Stage III planning process. The sum total of this information is used by the Agency Administrator to reduce uncertainty and support management decisions and actions.

Specific assessment outputs useful in evaluating long-term risk include:

- Indications of how the fire may burn; predictions of intensity and severity,
- Fuel conditions, moisture conditions, departures from average conditions,
- Fire dynamics - indicators of potential rapid escalation in fire behavior,
- Analysis and comparison of current fire danger indicators with historical data and trends,
- Fire history reviews, records of past fires in terms of area burned and type of fires (i.e., low - moderate intensity, surface fire, stand replacement, etc.),
- Probability of the fire reaching the planning area boundary (MMA),
- Probability of a season-ending weather event,
- Probability of a fire-slowng weather event,
- Probability of a large spread weather event,
- Indications of where the fire may spread, or total area that may be burned by the fire,
- How fast the fire will travel,
- How soon the fire may reach critical sites or the planning area boundary,
- Predictions of the range of potential fire effects on natural and cultural resources,
- Probability of adverse smoke events and dispersal.
- Review of past precipitation history.

An array of decision-making support aids is available to support wildland fire assessments. The choice of technique will depend on the information needed and the state of knowledge regarding that subject area. Techniques may range from a subjective, descriptive comparison to a very objective in-depth analysis using sophisticated mathematical models and quantitative data as available on the local unit. The Stage III Long-Term Risk Assessment provides quantitative information derived from specific analyses which utilize historic weather data, long-term climatological data, fuel moisture data, fuel conditions, fire danger, seasonal severity, satellite imagery, and simulation modeling. Use of technological tools is appropriate when a specific method can give the decision-maker information that reduces uncertainty associated with possible outcomes and facilitates the best decision possible.

No mandatory requirements exist for risk assessment. **However, in the WFIP Stage III, an assessment must be completed that yields some of the information listed in the output list above.** Units are encouraged to acquire input information and data and to utilize available long-term risk assessment techniques such as the Rare Event Risk Assessment Process (RERAP) Fire Area Simulator (FARSITE), fire effects indicators such as those gained from the Fire Order Fire Effects Model (FOFEM), and smoke emissions models. Risk assessments will both utilize and affect information contained in the Weather Conditions and Drought Prognosis, Threats to the MMA, Threats to Public Use and Firefighter Safety, Threats to Smoke dispersion and effects sections of the WFIP Stage III. Assessment outputs will have a direct bearing on information developed and included in the Monitoring Actions, Mitigation Actions, Resources needed to manage the fire, and Contingency Actions sections of the WFIP Stage III. As the quality of risk assessment increases, the quality of subsequent

decisions and probability of desirable outcomes will increase. Units should strive for the highest quality decisions possible.

Table 3 illustrates some common models useful in assessing wildland fire.

**Table 3.** Computer applications for assessing wildland fire.

Model	Description
<b>BehavePlus</b>	<p>BehavePlus can be used to predict a number of different factors given different fuel loadings, arrangements, and weather that describe fire behavior, in terms of rate of spread, flame length, size of fire, and spotting distances.</p> <p>The BehavePlus fire modeling system is a PC-based program that is a collection of models that describe fire and the fire environment. It is a flexible system that produces tables and graphs and can be used for a multitude of fire management applications. BehavePlus is the successor to the <i>BEHAVE fire behavior prediction and fuel modeling system</i>.</p>
<b>CANADIAN FOREST FIRE DANGER RATING SYSTEM (CFFDRS)</b>	<p>The CFFDRS is comprised of two primary subsystems: The FWI, or Fire Weather Index System and The FBP, or Fire Behavior Prediction System. The FWI System depends solely on daily weather measurements, is a good indicator of several aspects of fire activity, and is best used as a measure of general fire danger for administrative purposes.</p> <p>The FBP System allows the user to predict the rate of spread (meters per minute), fuel consumption (kilograms per square meter), and intensity (kilowatts per meter) at the head, back, or flanks of fires that are still accelerating after ignition or have reached a steady-state condition with their environment. A general description of the type of fire is also given (for instance, surface fire or intermittent crowning). A simple elliptical fire growth model is employed in estimating the size and shape of fire originating from a single ignition source as opposed to an established line of fire.</p>
<b>CONSUME</b>	<p>Consume 2.1 is a PC-based, interactive fuel consumption model that predicts total and smoldering fuel/biomass consumption during prescribed fires and wildland fires. Predictions are based on weather data, the amount and fuel moisture of fuels, and a number of other factors.</p>
<b>FARSITE (Fire</b>	<p>A fire growth simulation model that computes fire behavior and</p>



**Area Simulator)** spread over a range of time under conditions of heterogeneous terrain, fuels, and weather. This model projects where and how fast a fire may spread and how hot or intense it may burn. It is a fire growth simulation model that uses spatial information on topography and fuels along with weather and wind files. It incorporates the existing models for surface fire, crown fire, spotting, post-frontal combustion, and fire acceleration into a 2-dimensional fire growth model.

<b>FFE-FVS (Fire and Fuels Extension – Forest Vegetation Simulator)</b>	A model developed to simulate forest growth and yield but has been adapted to provide information for fuels reduction. Expected fire behavior and effects if a wildland fire burns through an area over the simulation period.
<b>FireFamilyPlus</b>	The fire climatology and occurrence program that combines and replaces the PCFIRDAT, PCSEASON, FIRES, and CLIMATOLOGY programs into a single package with a graphical user interface for the PC.
<b>FIREMON</b>	FIREMON is an inventory and fire effects monitoring package that provides fire managers with sampling methods, data storage, and a data analysis package.
<b>FlamMap</b>	A software program that creates geographic information system maps of potential fire behavior characteristics and environmental conditions. It is not a replacement for <i>FARSITE</i> or a fire growth simulation model. There is no temporal component in FlamMap. It uses spatial information on topography and fuels to calculate fire behavior characteristics at one instant.
<b>FEIS (Fire Effects Information System)</b>	Fire effects Information System-provides up-to-date information on fire effects on plants, animals, and ecosystems.
<b>FOFEM (First Order Fire Effects Model)</b>	A computer program for predicting tree mortality, fuel consumption, smoke production, and soil heating caused by prescribed fire or wildfire. First order fire effects are those that concern the direct or indirect or immediate consequences of fire. First order fire effects form an important basis for prediction of secondary effects such as tree regeneration plant succession, and changes in site productivity, but these long-term effects generally involve interaction with many variables (for example, weather, animal use, insects, and disease) and are not predicted by this program. Currently, FOFEM provides quantitative fire effects information for tree mortality, fuel consumption mineral soil exposure, smoke and soil heating.
<b>LANDFIRE</b>	LANDFIRE is a wildland fire, ecosystem, and fuel assessment-mapping project designed to generate consistent, comprehensive, landscape-scale maps of vegetation, fire, and fuel characteristics

for the United States. LANDFIRE includes a Rapid Assessment, which will map and model Fire Regime Condition Class (FRCC) at a broad-scale resolution for the entire United States by the summer of 2005. The Rapid Assessment is designed to fill data needs before the entire suite of LANDFIRE products is available and to help refine reference vegetation dynamics models for the LANDFIRE project.

**NFDRS  
(National Fire  
danger Rating  
System)**

This system combines weather, climate, and fuels information to predict the relative fire danger and potential for wildland fires to occur on a daily basis.

**NEXUS**

A crown fire hazard analysis software that links separate models of surface and crown fire behavior to compute indices of relative crown fire potential. NEXUS can be used to compare crown fire potential for different stands, and to compare the effects of alternative fuel treatments on crown fire potential. NEXUS includes several visual tools useful in understanding how surface and crown fire models interact.

**RERAP (Rare  
Event Risk  
Assessment  
Process)**

Determines probabilities that a wildland fire will reach or exceed an MMA or reach an area of concern due to a rare weather event. It also can provide probabilities of a season-ending event and smoke events.

**VCIS**

The ventilation climate information system (VCIS) allows users to assess risks to values of air quality and visibility from historical patterns of ventilation conditions.

**VDDT  
(Vegetation  
Dynamics  
Development  
Tool)**

This model uses state in transition models or box and arrow diagrams to show how vegetation can change over time.

**WFAS  
(Wildland Fire  
Assessment  
System)**

The Wildland Fire Assessment System is an internet-based information system. The current implementation provides a national view of weather and fire potential, including national fire danger and weather maps and satellite-derived "Greenness" maps.

---

***Threats***

Identification of all known and anticipated threats is critical in evaluating values, hazard, and probability for the fire(s). The nature of long-term strategic planning involves anticipating and predicting where the fire may move to, what it may impact, and designing a strategy to minimize or eliminate those impacts. Threats must be defined for the MMA boundary, all sensitive natural and cultural resources inside and immediately outside that boundary, firefighters and the public, air quality, and other concerns as appropriate. Once a threat is defined in this section of the Stage III, it must be linked through subsequent sections and appropriate actions (monitoring and mitigation) must be tied to that identified threat.

### ***Monitoring Actions***

A monitoring plan of action is necessary to ensure successful accomplishment of the objectives and to continually acquire information relevant to the fire situation. Monitoring is useful for documenting observed fire weather, observed fire behavior, fire movement toward management action points (MAP), fire effects, smoke dispersal and volume, and to aid in validating fire behavior and weather forecasts. Monitoring variables that are important can include, but are not limited to: smoke dispersal, live and dead fuel moistures, daily weather observations, fire perimeter and progression mapping, and observed fire behavior. Monitoring frequency will be based on fire activity and location. All monitoring information will be analyzed, applied as needed, and archived as part of the final documentation package.

### ***Mitigation Actions***

Science-based risk assessments, as discussed in the previous section, provide a solid foundation for developing a successful risk management/mitigation strategy. But, it must be clearly understood that risk assessment and risk management are not synonymous. Based on the risk assessment, decision-makers decide what to do about managing the risk. A part of the WFIP Stage III is a detailed plan that identifies mitigation actions, the activities for mitigating or eliminating risk. Risk can be mitigated or eliminated in three central ways: reduce the hazard, reduce the probability of the hazardous event occurring, and reduce the value of potential losses that could occur from the risk.

In wildland fire use, the first two risk mitigation types are the most frequently utilized, identified as mitigation actions in the implementation plan, and implemented as needed. Mitigation actions are on-the-ground activities that serve to increase the defensibility of a particular point, area, or line, like a planning area boundary (to reduce the probability of the hazardous event occurring); to check, direct, or delay the spread of fire (reduce the hazard); and to minimize threats to life, property, and resources (reduce value of potential losses). Mitigation Actions serve to mitigate or eliminate identified threats and may include non-fire tasks and specific fire applications.

Management action points are tactical decision points, either geographical points on the ground both inside and outside the MMA or specific points in time where an escalation or alteration of management actions is warranted in response to fire activity, proximity to identified threats, time of season, weather changes, or management decisions. The points are placed on maps that accompany the WFIP. They can be started in Stage II and added to in Stage III for long range needs. These points must be tied to identified

threats in the plan. Each management action point will have one or more corresponding mitigation actions described which will need implementation when the fire reaches it or after a specified time period. This documentation stays with the fire through its management and is amended periodically as new management action points and mitigation actions are developed. As management personnel change over the life of a wildland fire, this documentation provides continuity in direction needed when a fire approaches the management action point.

### ***Resources Needed to Manage the Fire***

Based on the Monitoring and Mitigation Actions, the Information Plan, and management oversight and qualifications needed to accomplish the objectives, resources needed to implement the plan and accomplish the objectives must be identified in this section. Resources identified here include those needed for the projected duration of operations as described in Stage III.

### ***Contingency Actions***

Contingency actions are actions necessary when mitigation actions are unsuccessful. They are identified for implementation to control the spread of fire into unwanted areas or to prevent it from adversely impacting a sensitive value. For example, if the fire crosses the MMA at any point along the perimeter and mitigation was unsuccessful, on-site firefighting resources will be utilized to achieve control. If control cannot be accomplished, the fire will be converted to a wildfire. A WFSA will be prepared to select the proper strategic alternative and necessary resources.

### ***Information Plan***

Among agency staff, cooperators, and affected publics, fire use objectives, risks, and tradeoffs are not always well understood or well accepted. Communication and education of all agency personnel involved with the planning and implementation of the use of wildland fire is crucial to successful program implementation. An understanding of the guiding principles and objectives by the public and media is essential for full social and political acceptance and endorsement of this program. As a result, it is becoming increasingly important to establish and maintain an aggressive and efficient communication and education effort for wildland fire use programs and for each wildland fire that is managed. In addition, wildland fire use operational actions are often viewed negatively.

This element of the WFIP Stage III provides documentation of the role of Information during the wildland fire use event, the message to be communicated, and operational procedures and processes to ensure that the information reaches all applicable audiences and supports local unit needs.

### ***Estimated Costs***

Cost Estimates developed in this Stage are projections of expenditures expected to be incurred during implementation over the predicted duration of the fire. These estimates will include both costs expended to date and projections from the signed date into the future.

### ***Post-Burn Evaluation***

Post-burn evaluations will be conducted as dictated by Agency Policy to evaluate the degree of accomplishment of stated objectives and desired fire effects. Secondly, an evaluation of the total operation is vital to improvement of programmatic efficiency. Specific areas that may be evaluated include, but are not limited to:

- Management and mitigation of safety,
- Use of best available science, including weather and fire behavior forecasts, long-term risk assessments, fire growth simulations if applicable,
- Short-term fire effects,
- Public information and education, notification of individuals, groups, and areas potentially impacted by fires,
- Consistency with land and resource management plans and fire management plans,
- Attention to resource management issues and concerns.

### ***Signatures and Date***

The WFIP Stage III must be approved by the Agency Administrator or delegated individual upon completion. This approval is documented by signature and date at the end of the Stage III. This approval does not constitute the Periodic Fire Assessment which must be continued on the set frequency after completion of the Stage III.

### ***Periodic Fire Assessment***

Once Stage III is completed, the Periodic Fire Assessment is completed. The process can be continued from Stage I or II but the Signature Page must clearly reflect the change in "WFIP Planning Stage Required" to Stage III. The Agency Administrator (or delegated individual) is required to periodically affirm the capability to continue management of the fire as a WFU event. This process will document and ensure management accountability throughout the duration of the wildland fire use event.

The Periodic Fire Assessment consists of the same elements as described for WFIP Stage I (See WFIP Stage I Periodic Fire Assessment description for more information. These include:

- Decision Criteria Checklist
- Wildland Fire Relative Risk Assessment
- Wildland Fire Use Management Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page

# Chapter 4: Wildland Fire Use Management Organizations

---

## Organizational Needs

Managing wildland fire for a wide range of objectives across diverse land uses and vegetative complexes subject to a mixture of fire regimes is one of the highest risk and complex programs facing natural resource managers. Organizational needs to complete this management vary significantly with site-specific circumstances. All wildland fires managed for resource benefits (wildland fire use) will have a position commensurate with the fire situation and needs (see Wildland Fire Use Assessment) assigned. The additional personnel necessary to accomplish the objectives and implement the WFIP will be determined for the specific situation locally.

No interagency standards exist for the configuration of teams responsible for preparation of Wildland Fire Implementation Plans, the duration of time that they must be in place, and what products they must create. Use of an Incident Action Plan is appropriate for all fires that exceed the first few days when actions must be performed by on-the-ground personnel. This is a safety concern and is necessary to provide clear and concise direction, to document assigned resources and mitigation actions and other safety issues like frequency assignments and emergency medivac procedures. Long term management of wildland fires include periods of fire behavior that range from extremely active to inactive. Fire activity will cycle with weather, fuel moisture and availability, and successful implementation of mitigating actions. Having someone with expert fire behavior knowledge in the management organization is advised.

As conditions escalate, management needs will increase; additional personnel can be added to support and assist the Fire Use Manager, and, if conditions extend to the highest difficulty levels, a formal management team can be ordered. These formalized teams may make the most significant contribution in support of local units and management of the fire. These teams may be developed locally from unit and cooperator personnel or be formal, established Fire Use Management Teams (FUMT) obtained through the established resource ordering process. A Fire Use Management Team has a minimum standard of Type II qualified personnel, with the IC having attended S-580 Advanced Fire Use Applications. The FUMT includes an Incident Commander, Planning Section Chief, Operations Section Chief, Logistics Section Chief, Safety Officer, Information Officer and Long Term Fire Behavior Analyst (LTAN). Normally at least three additional positions are filled which may be different on each assignment and are determined by the Incident Commander and the Agency Administrator.



The capability to predict fire behavior and assess long term management considerations is critical and in most situations is done by the LTAN who is trained in using fire behavior and risk assessment models and familiar with information technology. The LTAN is critical in predicting the potential area and extent of burning, assessing long-term risk, and validating the maximum manageable area (MMA). He/she also predicts the potential of a fire to reach certain values that may be threatened over the long term and the potential timing of a fire ending event. An FBAN provides tactical fire behavior predictions, obtains weather observations and forecasts, and assesses short-term risk.

Amending the WFIP is important. In the Stage I and Stage II levels the WFIP will require amending as often as the current and forecasted weather expires, which is an element of those Stages. This can be expected to happen every 5-7 days at a minimum. Stage III may be more encompassing in regard to long-term assessment and mitigation planning but will also require periodic amendments. Normally as the fire season progresses, new mitigation actions are developed and new fires may be authorized in the original MMA. Mapping, weather predictions and seasonal severity assessments will change over the life of the fire which need to be included as updated information becomes available. Agency Administrators are required to approve any amendments to the plan as they occur.

## References

---

- National Academy of Public Administration. 2001. *Managing wildland fire: enhancing capacity to implement the Federal Interagency Policy*. Washington, D.C.
- National Fire and Aviation Executive Board. 2005a. *Three kinds of wildland fire*. Briefing Paper #03. National Interagency Fire Center, Boise, ID.
- National Fire and Aviation Executive Board. 2005b. *Use of wildland fire*. Briefing Paper #02. National Interagency Fire Center, Boise, ID.
- U.S. General Accounting Office. 2004. *Wildland Fires: Forest Service and BLM need better information and a systematic approach for assessing the risks of environmental effects*. Washington, D.C. (name changed to U.S. Government Accounting Office).
- USDI/USDA/DOE/DOD/DOC/USEPA/FEMA/NASF. 2001. *Review and update of the 1995 Federal Wildland Fire Management Policy*. Washington, D.C.
- USDI/USDA. 1998. *Wildland and prescribed fire: implementation procedures reference guide*. Boise, ID.
- USDA/USDI. 2003. *Interagency strategy for the implementation of Federal Wildland Fire Management Policy*. Washington, D.C. 62 p

## Appendix A:

---

### Wildland Fire Implementation Plan

Standardized, reproducible forms for the WFIP process are included in this Appendix. While a standardized format is provided for the WFIP (in Word format) that can be used to prepare the document, an electronic version similar to the WFSA electronic program will be available. Users can choose to prepare a WFIP by using the forms presented in this Appendix or by using the electronic version when available.

Specific forms are included for the complete WFIP:

#### WFIP Stage I:

- Strategic Fire Size-Up
- Decision Criteria Checklist
- Relative Risk Rating
  - Wildland Fire Relative Risk Assessment: Step 1: Determining Values
  - Wildland Fire Relative Risk Assessment: Step 2: Determining Hazard
  - Wildland Fire Relative Risk Assessment: Step 3: Determining Probability
  - Wildland Fire Relative Risk Assessment: Step 4: Determining Wildland Fire Relative Risk
- Planning Needs Assessment Chart
- Fire Use Manager Decision Chart

#### WFIP Stage II:

#### WFIP Stage III

# Wildland Fire Implementation Plan

## Table of Contents

Fire Name	
Fire Number	
Administrative Unit(s)	

***Documentation Product***

***Neede  
d Complete  
d***

**WFIP Stage I:**

- Strategic Fire Size-Up**
- Decision Criteria Checklist**
- Management Actions**
- Periodic Fire Assessment**


**WFIP Stage II:**

- Objectives**
- Fire Situation**
- Management Actions**
- Estimated Costs**
- Periodic Fire Assessment**


**WFIP Stage III**

- Objectives**
- MMA Definition**
- Weather Conditions and Drought Prognosis**
- Long-Term Risk Assessment**
- Threats**
- Monitoring Actions**
- Mitigation Actions**
- Resources Needed**
- Contingency Plan**
- Information Plan**
- Estimated Costs**
- Post-Burn Evaluation**
- Signatures and Date**
- Periodic Fire Assessment**


**Appendix**

--	--


## WFIP Stage I:

*Strategic Fire Size-Up:*

<b>Fire Name</b>		
<b>Fire Number</b>		
<b>Administrative Unit(s)</b>		
<b>Start Date/Time</b>		
<b>Discovery Date/Time</b>		
<b>Current Date/Time</b>		
<b>Current Size</b>		
<b>Fuel Model</b>		
<b>Current Weather</b>		
<b>Observed Fire Behavior</b>		
<b>Location: Legal Description(s)</b>		
<b>Latitude Longitude</b>		
<b>Local Description</b>		
<b>FMU</b> (circle appropriate FMU situation)	WFU not Approved	WFU Approved

<b>Cause</b> (circle fire cause)	Human Caused Ignition	Natural ignition
-------------------------------------	-----------------------	------------------

<b>Suitability for Wildland Fire Use</b> (circle situation, initials of person preparing, date/time)	<b>Suppression</b>	<b>Wildland Fire Use Candidate –</b> Continue with Decision Criteria Checklist	<b>Initials</b>	<b>Date/Time</b>
---	--------------------	---	-----------------	------------------

# Decision Criteria Checklist

## Decision Element

Is there a threat to life, property, or public and firefighter safety that cannot be mitigated?

Are potential effects on cultural and natural resources outside the range of acceptable effects?

Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?

Is there other proximate fire activity that limits or precludes successful management of this fire?

Are there other Agency Administrator issues that preclude wildland fire use?

Yes	No

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

Recommended Response Action (check one)		Signature/Position	Date
Suppression Response			
Wildland Fire Use Response			

### Justification for Suppression Response:

---



---



---



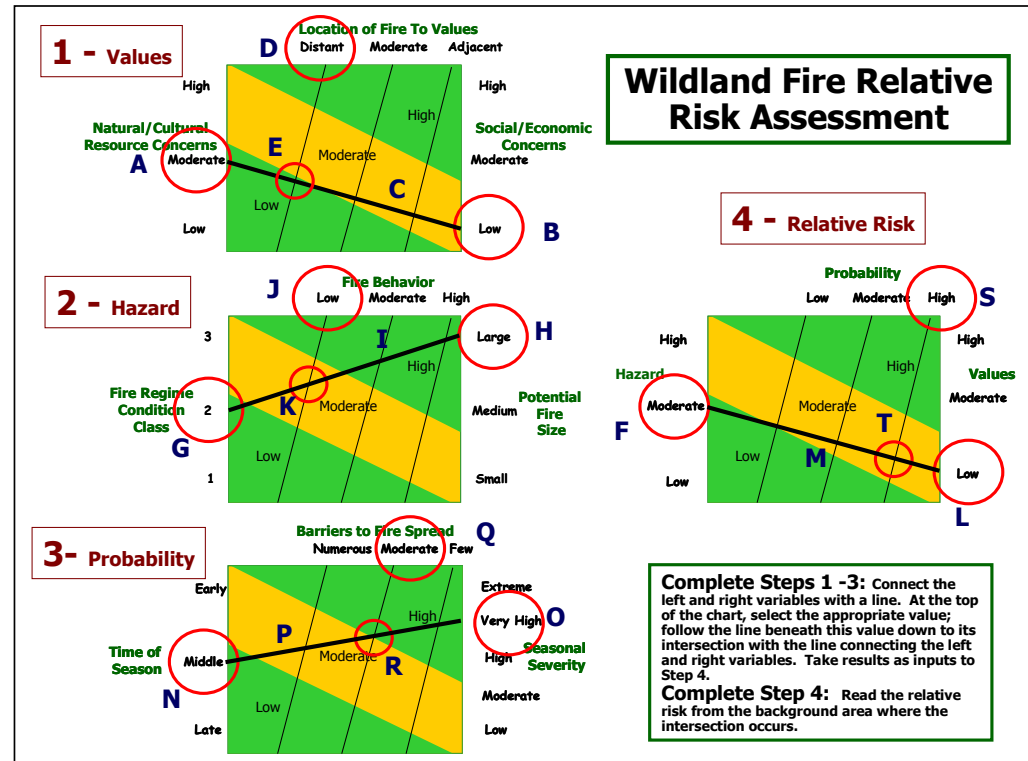
---





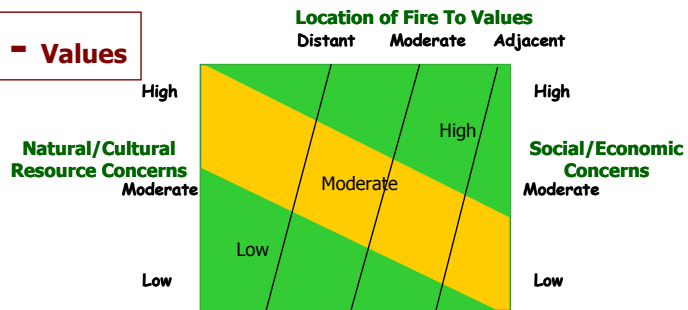
<b>A</b>	Step 1	Locate Natural/Cultural Resource Concern level
<b>B</b>	Step 1	Locate Social/Economic Concern level
<b>C</b>	Step 1	Draw line connecting left and right variables
<b>D</b>	Step 1	Locate Location of Fire to Values level
<b>E</b>	Step 1	Follow interior line down to intersection with line connecting left and right variables, locate Value Assessment output (Low, Moderate, High)
<b>F</b>	Step 4	Take Step 1 - Value Assessment output to Step 4 as Value input
<b>G</b>	Step 2	Locate Fire regime condition class level
<b>H</b>	Step 2	Locate Potential Fire Size level
<b>I</b>	Step 2	Draw line connecting left and right variables
<b>J</b>	Step 2	Locate Fire Behavior level
<b>K</b>	Step 2	Follow interior line down to intersection with line connecting left and right variables, locate Hazard Assessment output (Low, Moderate, High)
<b>L</b>	Step 4	Take Step 2 - Hazard assessment output to Step 4 as Hazard input
<b>M</b>	Step 4	Draw line connecting Value and Hazard levels
<b>N</b>	Step 3	Locate Time of Season level
<b>O</b>	Step 3	Locate Seasonal Severity level
<b>P</b>	Step 3	Draw line connecting left and right variables
<b>Q</b>	Step 3	Locate Barriers to Fire Spread level
<b>R</b>	Step 3	Follow interior line down to intersection with line connecting left and right variables, locate Probability Assessment output (Low, Moderate, High)
<b>S</b>	Step 4	Take Step 3 - Probability assessment output to Step 4 as Probability input
<b>T</b>	Step 4	Follow interior line down to intersection with line connecting left and right variables, locate Relative Risk Assessment (Low, Moderate, High)

## Step-By-Step Instructions for Completing the Wildland Fire Relative Risk Assessment

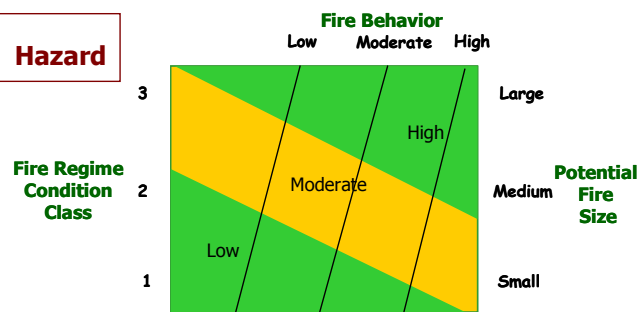


# Wildland Fire Relative Risk Assessment

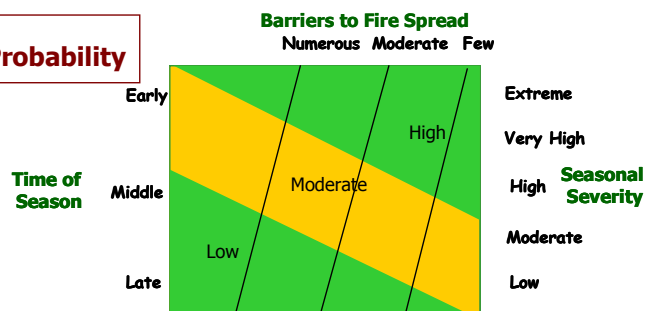
## 1 - Values



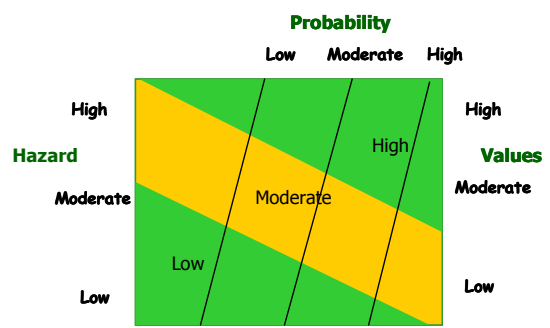
## 2 - Hazard



## 3 - Probability



## 4 - Relative Risk

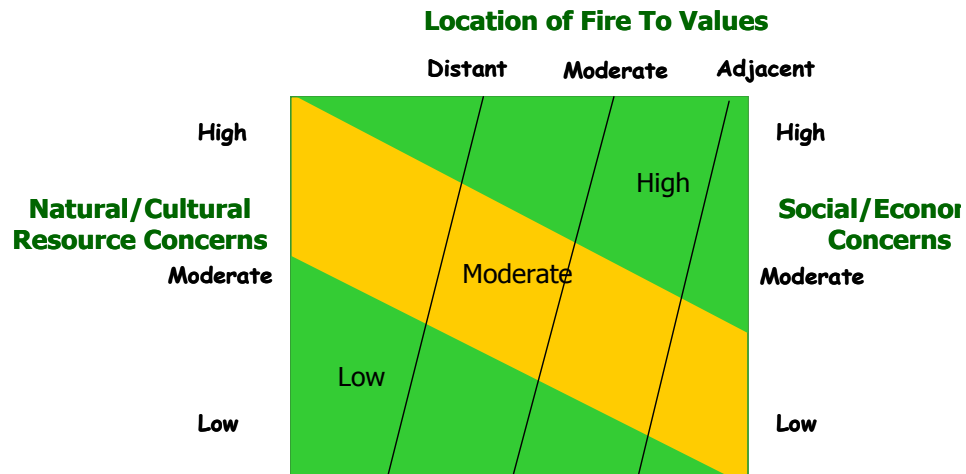


**Complete Steps 1 -3:** Connect the left and right variables with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Take results as inputs to Step 4.

**Complete Step 4:** Read the relative risk from the background area where the intersection occurs.



## Wildland Fire Relative Risk Assessment: Step 1: Determining Values



Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down its intersection with the line connecting the left and right variables. Read the Value Assessment from the background area where the intersection occurs.

**Notes:**

**PART 1: VALUE ASSESSMENT:** Values are those ecologic, social, and economic effects that could be lost or damaged because of a fire. Ecologic values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecologic functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities. This assessment area allows opportunity for the local agency administrator to identify particular local concerns. These concerns may be identified in the fire management plan or other planning documents.

Formatted: Font: (Default) Tahoma, 9 pt

Formatted: Font: (Default) Tahoma, 9 pt

**Natural/Cultural Resource Concerns** - key resources potentially affected by the fire. Examples include, but are not limited to habitat or populations of threatened, endangered, or sensitive species, water quality, erosion concerns, and invasive species.

Low	Moderate	High
Resource concerns are few and generally do not conflict with management of the fire. Mitigation measures are effective.	Significant resource concerns exist, but there is little conflict with management of the fire. Mitigation measures are generally effective.	Multiple resource concerns exist, some of which may conflict with management of the fire. The effectiveness of needed mitigation measures is not well established.

**Social/Economic Concerns** - the risk of the fire, or effects of the fire, impacting the social or economic concerns of an individual, business, community or other stakeholder involved with or affected by the fire. Social concerns may include degree of support for the Wildland Fire Use program or resulting fire effects, potential consequences to other fire management jurisdictions, impacts to tribal subsistence or gathering of natural resources, air quality regulatory requirements and public tolerance of smoke. Economic concerns may include potential financial impacts to property, business, or infrastructure. Infrastructure impacts may be costs to repair or replace sediment catchments, wildlife guzzlers, corrals, roads, culverts, power lines, domestic water supply intakes, and similar items.

Low	Moderate	High
Local support for wildland fire use is high. The fire should have little or no impact on subsistence or tribal activities involving treaty rights. The fire is expected to remain within a single jurisdiction or agreements are in place to allow the fire to move across several jurisdictions. Media coverage is favorable. Few structures or business ventures are potentially affected by the fire. There are few impacts to recreation and tourism.	Local support of wildland fire use is clearly divided between supporters and opponents. The fire will have some impacts on subsistence or tribal activities involving treaty rights. The fire is expected to involve more than one jurisdiction, cooperator, or special interest group and agreements need to be developed. Media coverage tends to be a mix of favorable and unfavorable views. Some structures may be threatened by the fire or some business ventures have been affected by the fire.	Local support for wildland fire use is low. The fire will have significant impacts on subsistence activities or tribal activities involving treaty rights. Smoke impacts may become a concern for higher level air quality regulatory agencies. The fire is expected to involve several jurisdictions, cooperators, and special interest groups and agreements requiring significant negotiation need to be developed. Media coverage tends to be unfavorable. Many structures or private properties could be threatened.

**Location of Fire to Values**

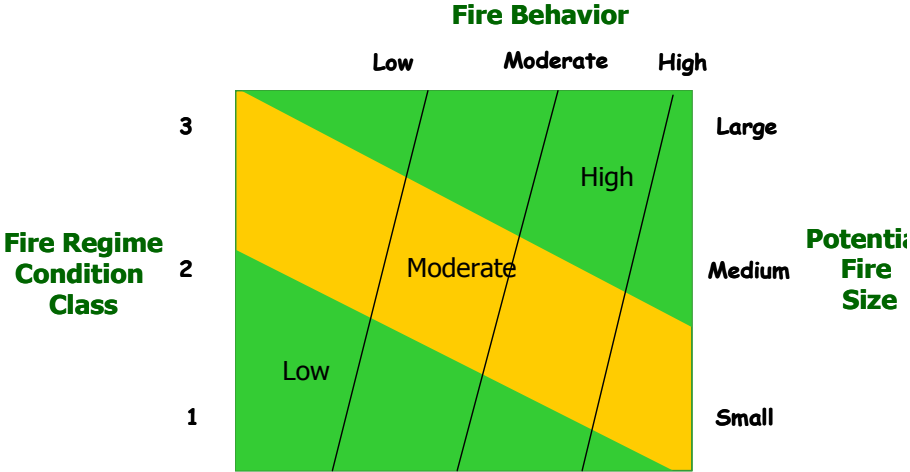
Distant	Moderate	Adjacent
Fire location is not proximate to values to be protected or fire is	Fire location is moderately proximate to values. Location is such that, based	Fire location is in close proximity to values. Without mitigation actions,

located where it is highly unlikely that it would reach the values.

on historical data, fire could potentially reach the values but will take multiple burning periods and sustained fire activity to reach the values.

fire will be expected to reach the values.

# Wildland Fire Relative Risk Assessment: Step 2: Determining Hazard



Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down its intersection with the line connecting the left and right variables. Read the Hazard Assessment from the background area where the intersection occurs.

Notes:



**PART 2: HAZARD ASSESSMENT:** The hazard in wildland fire is made up of the conditions under which it occurs and exists, its ability to spread and circulate, the intensity and severity it may present, and its spatial extent.

**Current Fire Behavior** – the current fire behavior or that most recently observed. Changing fire behavior is addressed through repeated completion of the Periodic Fire Assessment.

Low	Moderate	High
Short duration flaming front with occasional torching. Fuels are uniform and fire behavior can be easily predicted and tactics implemented.	Short range spotting occurring. Moderate rates of spread are expected with mainly surface fire and torching. Fuels and terrain are varied but don't pose significant problems in holding actions.	Long range spotting > ¼ mile. Extreme rates of spread, and crown fire activity are possible. Fuels, elevation, and topography vary throughout the fire area creating high resistance to control.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like "conductive weather" and "alignment" in the text. This would kind of get away from the "attack" terminology also which I don't particularly like here.

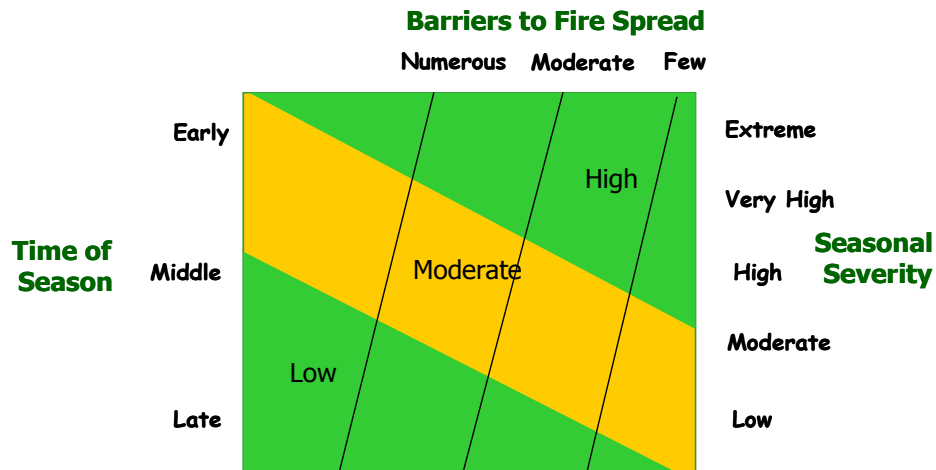
**Fire Regime Condition Class** – a measure of ecological functions at risk based on changes in vegetation.

1	2	3
Vegetative composition and structure are resilient and key components are at low risk of loss. Few, if any, fire return intervals have been missed and fuel complexes are similar to historic levels.	Both the composition and structure of vegetation has shifted towards conditions that are less resilient and more at risk of loss. Some fire return intervals have been missed, stand structure and composition, and fuel complexes have been altered and present potential for fires of severity and intensity levels in excess of historic levels.	The highly altered composition and structure of the vegetation predisposes the landscape to fire effects well outside the range of historic variability, potentially producing changed fire environments never before measured.

**Potential fire size** - the potential fire size by the end of the season in comparison to historical fire occurrence.

Small	Medium	Large
Fire size is expected to be small for the dominant fuel type involved	Fire size is expected to be in the mid-range for the dominant fuel type involved	Fire size is expected to be large for the dominant fuel type involved.

## Wildland Fire Relative Risk Assessment: Step 3: Determining Probability



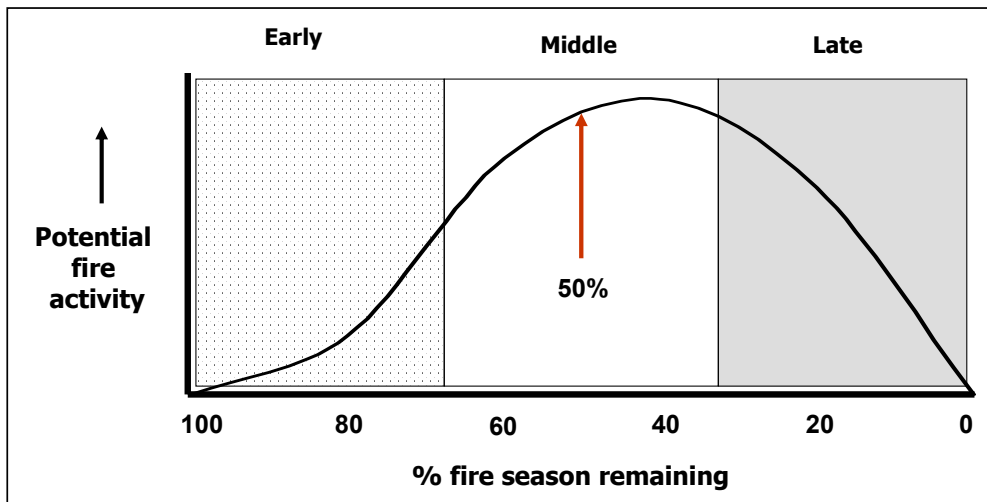
Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Read the Probability Assessment from the background area where the intersection occurs.

**Notes:**

**PART 3: PROBABILITY ASSESSMENT:** Probability refers to the likelihood of a fire becoming an active event having potential to adversely affect values.

**Time of Season** - the current time in relation to the historical fire season. The chart below the guidelines reinforces the importance of time of season. During the early part of the fire season, the peak of burning activity is still to come, thus the fire could present substantial variation in behavior and activity. In the middle of the season, the peak of burning activity may or may not have occurred while in the late part of the season, the peak of fire activity generally has occurred and managers can reasonably expect diminishing fire activity and behavior as time progresses. As the amount of fire season remaining decreases or as the time of season progresses from early to late, management concerns and issues associated with potential fire activity decrease.

Early	Middle	Late
The current date is in the early portion of the historic fire season, at least 2/3 of the established fire season remains and the peak of burning activity is still to come.	The current date is in the middle of the historic fire season, at least 1/3 of that period has passed and no less than 1/3 remains. The peak burning activity period either has occurred, is occurring now, or will occur very soon.	The current date is in the latter part of the historic fire season. At least 2/3 of the historic period has passed, the peak burning activity period has occurred, and the probability of a season-ending or fire-ending event is increasing quickly.



**Seasonal Severity** - a measure of the potential burning conditions as expressed by factors such as ERC, drought status, live fuel moistures, dead fuels moistures, soil moisture, stream discharge, and similar types of measures.

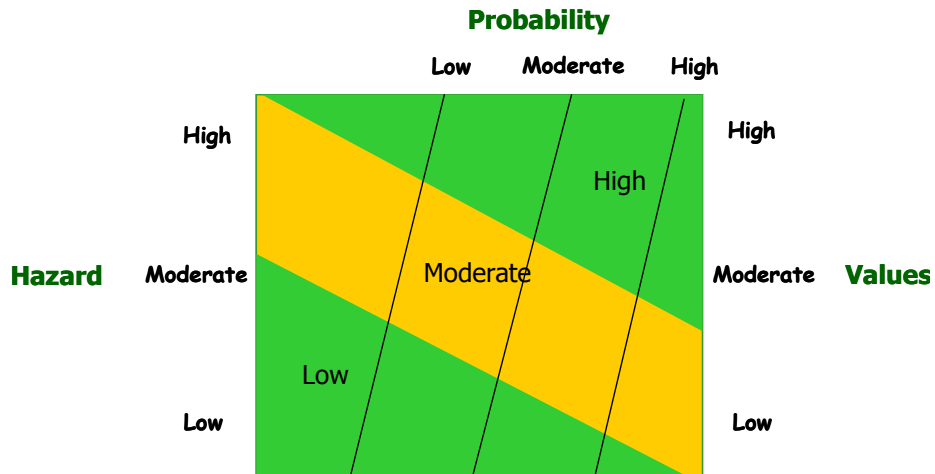
Low	High	Extreme
Measures of fire danger are below to somewhat above seasonal averages. Drought status is within seasonal norms with no long-term drought present	Measures of fire danger are well above seasonal averages but not setting new records. The area is in short-term drought (1-2 years of drought) but not considered to be in long-term drought.	Measures of fire danger are setting new records. The area is considered to be in long-term drought (3 or more years of drought).

**Comment:** Changes made to match Risk Charts

**Barriers to Fire Spread** – a measure of the natural defensibility of the fire location and an indication of degree of potential mitigation actions needed.

<b>Numerous</b>	<b>Moderate</b>	<b>Few</b>
The location of the fire and presence of natural barriers and fuel breaks limit the horizontal fuel continuity, minimal mitigation actions on-the-ground will be needed.	The location of the fire and presence of some natural barriers and fuel breaks limit the horizontal fuel continuity on some, but not all fire flanks, some mitigation actions on-the-ground will be needed to protect threats to boundaries and sensitive areas.	The location of the fire and presence of only limited natural barriers and fuel breaks will permit fire spread across continuous fuels. Mitigation actions on-the-ground will be needed but are expected to be effective.

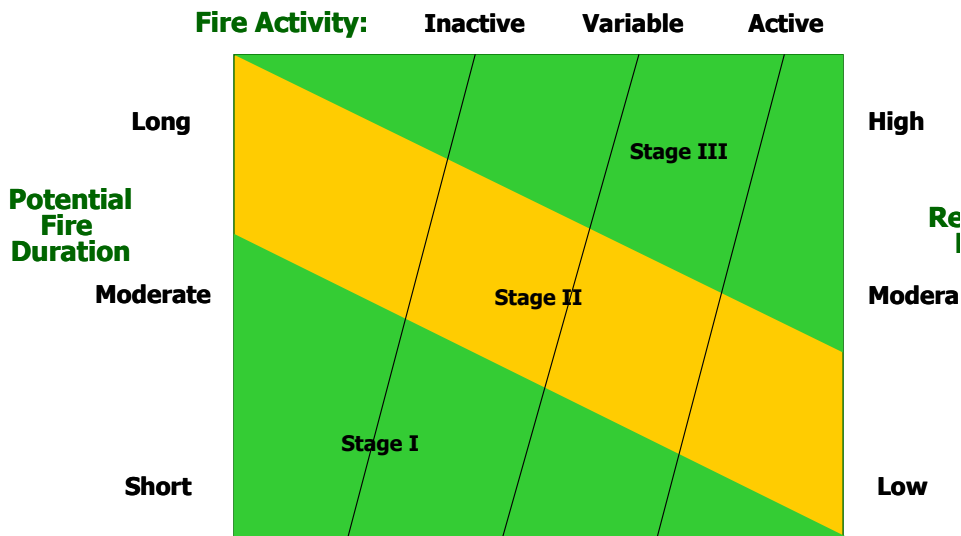
## Wildland Fire Relative Risk Assessment: Step 4: Determining Wildland Fire Relative Risk



Connect the left and right values with a line. At the top of the chart, select the appropriate value; follow the line beneath this value down to its intersection with the line connecting the left and right variables. Read the Relative Risk from the background area where the intersection occurs.

### Notes:

# Planning Needs Assessment Chart



To complete the chart, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its intersection with the line connecting the left and right variables. Read the planning need from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process (Wildland Fire Relative Risk Assessment).

## Guidelines for Planning Needs Assessment Chart.

**Potential Fire Duration** – the estimated length of time that the fire may continue to burn in comparison to historical fire durations and amount of fire season available for a given area.

Short	Moderate	Long
Fire is expected to persist for only the shortest time in comparison to historical fire durations. This may be as short as only a few days. Fuels may be limiting, weather may be limiting, or time of fire season may be limiting. Generally, this could be referenced as less than the historical average fire length for a given area.	Fire is expected to last for a time period similar to the historical average length of fires.	Fire is expected to last for a time period longer than the historical average length of fires.

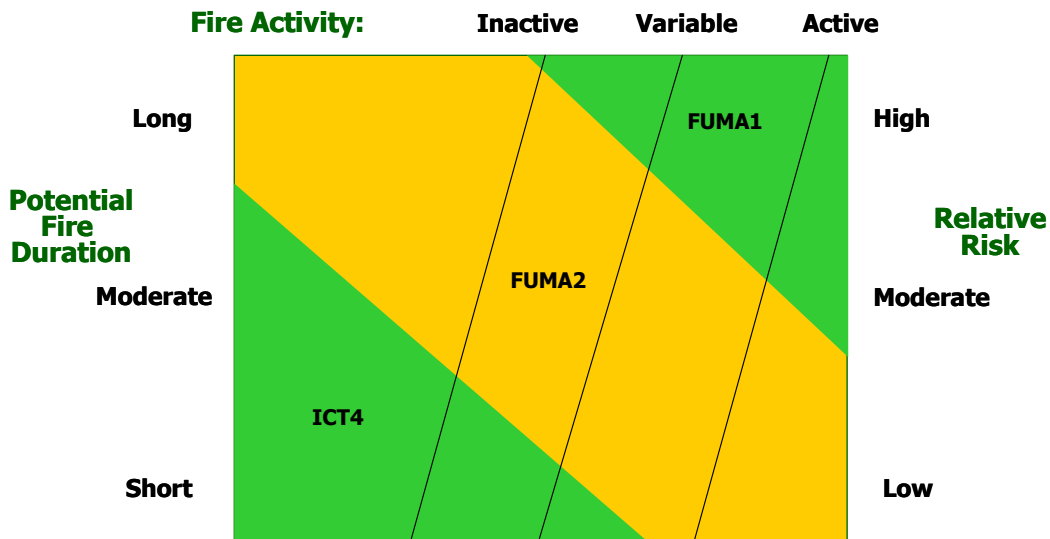
**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like "conducive weather" and "alignment" in the text. This would kind of get away from the "attack" terminology also which I don't particularly like here.

**Relative Risk** – a measure of the relative risk, determined directly from the Wildland Fire Relative Risk Assessment, so no range of values is listed here.

**Fire Activity** - the relative activity of the fire in terms of intensity and spread over time.

Inactive	Variable	Active
Fire is burning with very low intensity, little or no spread, and little or no increase in burned area. Fire is confined to surface litter and duff layers.	Fire is burning predominantly in surface litter and duff layers, with low intensity and little or no spread but has occasional periods of increased intensity and spread. Growth of burned area is not constant but occurs in response to increased activity. Area increase may be static for moderately long periods and then increase for short periods. Fire size usually increases by less than 50% during active periods.	Fire is burning in all fuel strata (litter, surface, and crown) with periods of sustained flaming fronts, perimeter growth, and area increases that can exceed 100% at times. Infrequent periods of low activity occur but spread is generally constant.

# Fire Use Manager Decision Chart



To complete the chart, connect the left and right variables with a single line (potential fire duration and relative risk, respectively). Select the appropriate level of fire activity at the top of the chart and follow the line beneath that value down to its intersection with the line connecting the left and right variables. Read the level of Fire Use Manager needed directly from the background area where the intersection occurs. The Relative Risk values are those obtained from the Wildland Fire Relative Risk Assessment process (Wildland Fire Relative Risk Assessment).



## Guidelines for Fire Use Manager Decision Chart.

**Potential Fire Duration** – the estimated length of time that the fire may continue to burn in comparison to historical fire durations and amount of fire season available for a given area.

Short	Moderate	Long
Fire is expected to persist for only the shortest time in comparison to historical fire durations. This may be as short as only a few days. Fuels may be limiting, weather may be limiting, or time of fire season may be limiting. Generally, this could be referenced as less than the historical average fire length for a given area.	Fire is expected to last for a time period similar to the historical average length of fires.	Fire is expected to last for a time period longer than the historical average length of fires.

**Comment:** I think this is the best thing to use here.....BUT. How about using Potential Fire Behavior.....since this is a daily assessment we could better describe expected FB with hauling chart symbols on the Risk chart..... and elude to things like "conducive weather" and "alignment" in the text. This would kind of get away from the "attack" terminology also which I don't particularly like here.

**Relative Risk** – a measure of the relative risk, determined directly from the Wildland Fire Relative Risk Assessment, so no range of values is listed here.

**Fire Activity** - the relative activity of the fire in terms of intensity and spread over time.

Inactive	Variable	Active
Fire is burning with very low intensity, little or no spread, and little or no increase in burned area. Fire is confined to surface litter and duff layers.	Fire is burning predominantly in surface litter and duff layers, with low intensity and little or no spread but has occasional periods of increased intensity and spread. Growth of burned area is not constant but occurs in response to increased activity. Area increase may be static for moderately long periods and then increase for short periods. Fire size usually increases by less than 50% during active periods.	Fire is burning in all fuel strata (litter, surface, and crown) with periods of sustained flaming fronts, perimeter growth, and area increases that can exceed 100% at times. Infrequent periods of low activity occur but spread is generally constant.

***Management Actions:***

<b>Forecasted Weather</b>	
<b>Forecasted Fire Behavior</b>	
<b>Hazards and Safety Concerns</b>	
<b>Management Actions</b>	
<b>Availability of Resources</b>	

## **Periodic Fire Assessment**

Insert the following sections, either by completing new versions or by using those already completed as part of the WFIP Stage I:

- Decision Criteria Checklist
- Wildland Fire Risk Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page




**WFIP Stage II:**

**Attach Stage I information.**

*Objectives:*  
**Objectives**

--

*Fire Situation:*

**Current and Predicted Fire Behavior**

--

**Current and Predicted Weather**

--

**External Concerns**

--

**Environmental Concerns**

--

**Safety Considerations**

--

**Threats**

--

*Management Actions:*

**Management Actions**

--

***Estimated Costs:***  
**Estimated Costs**

--

## **Periodic Fire Assessment**

Insert the following sections, either by completing new versions or by using those already completed as part of the WFIP Stage I:

- Decision Criteria Checklist
- Wildland Fire Risk Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page






## WFIP Stage III:

Attach Stage I and Stage II information. Update and/or revise Stage I and II as necessary.

*Objectives:*

Natural and Cultural Resource Objectives

Constraints


*Maximum Manageable Area (MMA) – Definition and Maps*

Acres in MMA:

Definition of MMA:

Attach Map of MMA

--

*Weather Conditions and Drought Prognosis*

Weather Conditions/Drought: Discussion and Prognosis

--

*Long-term Risk Assessment and Map (if applicable)*

Risk Assessment (Describe

--

**techniques utilized and outputs, include maps as appropriate)**

--

***Threats***

**Threats to MMA**

--

**Threats to Public Use and Firefighter Safety**

--

**Smoke Dispersion and Effects**

--

**Other Threats**

--

***Monitoring Actions***

**Describe Monitoring Actions, Frequency, Duration**

--

***Mitigation Actions***

**Describe Holding Actions and Other Mitigation Actions, and Management Action Points that initiate these actions, and Key to Map if necessary**

--

***Resources Needed to Manage the Fire Under Expected Weather Conditions***

**Describe resources necessary to accomplish ignition, holding, other mitigation actions, and monitoring actions**

--

***Contingency Actions***

**Describe Contingency actions,**

--

**management  
action points that  
initiate them,  
resources needed,  
etc.**

--

***Information Plan***

**Describe  
Information Plan,  
Contacts,  
Responsibilities,  
etc.**

--

***Estimated Costs of Managing the Fire***

**Describe costs in  
terms of resources  
needed, projected  
duration, etc.**

--

***Post-burn Evaluation***

**Describe post-  
burn evaluation  
procedures,  
resource**

--

**requirements,  
costs, duration,  
etc.**

--

***Signatures***

**Include  
signatures/titles/  
dates for  
preparing,  
approving, and  
any concurring  
individuals**


## **Periodic Fire Assessment**

Insert the following sections, either by completing new versions or by using those already completed as part of the WFIP Stage I:

- Decision Criteria Checklist
- Wildland Fire Risk Assessment
  - Part 1: Planning Needs Assessment
  - Part 2: Fire Use Manager Decision Chart
- Signature Page






## Appendix B:

---

### Preplanning WFIP Elements

Parts of the WFIP can be planned well in advance of the fire season. Preplanning is especially critical in those fuel types where fires develop rapidly and a "long duration" fire is only a few days. In many cases, these elements can be part of the fire management unit information in the fire management plan. The following items from the WFIP can be preplanned:

- Objectives – all or most of these should be known in advance and based on the resource objectives in the land use plan and the fire management unit objectives.
- Constraints – standards and guidelines within the land use plan and fire management unit are the basis for any operational constraints. These constraints typically affect which types of activities may occur where or when.
- Safety Considerations – document those safety considerations associated with various aspects of the environment, such as cliffs or mineshafts; with well known and generally regular weather events, such as foehn winds; and with particular times of the year, such as hunting seasons.
- Values at Risk – document those values threatened by either the simple presence of fire, and certain fire intensity, or any appropriate management response actions that may be taken. These values may consist of different types of natural and cultural resources or physical features such as campgrounds or private property.
- External Concerns – these consist of concerns known to exist for cooperators, adjacent owners or land managers, communities, regulatory agencies, and other stakeholders (i.e. the critical concerns discussed as part of the relative risk rating). Not all concerns can be known in advance since some are situational and not tied to a particular fire management unit. The Objectives and Constraints should adequately cover internal concerns.
- Implementation Actions – some preliminary implementation actions, or appropriate management responses, can be developed in advance, particularly for Stage I and Stage II. Most often, these will consist of different levels of monitoring to some holding or checking actions. Units that expect to develop Stage III without the aid of a Fire Use Management Team may develop more detailed descriptions of the allowable responses or a list of response options.

- Maximum Manageable Area – preliminary MMAs can be designated based on roads, jurisdictional or land allocation boundaries, watershed boundaries, or similar features. These MMAs are not finalized until a wildland fire use event occurs and management is elevated to Stage III. Preliminary MMAs can include information on which segments are naturally defensible and which are not, as well as what types of actions may be needed to increase the defensibility of the those segments. Preplanned MMAs may be the only option for some fire management units.
- Management Action Points – preliminary management action points may be identified to address certain types of values at risk or preliminary MMA boundaries. Full development may not happen until the fire occurs since the appropriate management response often depends on fire behavior.
- Monitoring Plan – do not confuse the monitoring plan with monitoring as an appropriate management response. The monitoring plan is intended to determine if the fire is meeting or has met the management objectives. Since nearly all the management objectives should be known in advance, this plan can also be prepared in advance.
- Information Plan – use experience from past fires, both suppression and wildland fire use, to develop many elements of the information plan. Some elements may be more situational or new contacts or contact methods may occur between the development of this preliminary plan and an actual fire.
- Agreements – although not technically part of the WFIP, fully implementing a WFIP may require that cross-jurisdiction agreements be in place to allow the fire to move from one jurisdiction to another. These jurisdictions may be other land management agencies; state or local fire protection agencies or districts; or private landowners.

In addition to WFIP elements, several types of data are recommended for advanced development or for addition to the fire management plan as data are developed from different fires. As appropriate, update data each year. The following list is not exhaustive but intended as a tickler.

- Weather Data
  - NFDRS station catalogs and weather files
  - Definitions for:
    - Season or fire ending event
    - Fire slowing events (event plus number of days the event is effective)
    - Large fire growth events or key weather events that result in large fire growth

- Term files for use in RERAP
- Preliminary RERAP assessments for individual FMUs with assumptions (risk of fire movement over set distances by time of year and general direction)
- FARSITE layers, including changes resulting from the previous year's fires and vegetation management actions
- Structure protection plans
- Potential evacuation needs, routes and responsibilities, which should be shared with the appropriate authority in advance of an ignition.
- Mitigation measures for TES species (plants, animals, and fish) that have been successful in the past
- Data Layers (actual data or location of data)
  - Fuels
  - Roads and trails
  - Streams
  - Values to be protected (some of this data may be protected).
  - Land status
  - Fire history
  - Fuels treatment history
  - Vegetation type or dominant species
  - Vegetation structure
  - Potential vegetation
  - Fire regime or fire regime condition class
  - Smoke sensitive areas

# GLOSSARY

**Appropriate Management Response** Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

**Appropriate Suppression Response** Specific actions taken in response to a wildland fire, with priority consideration given to firefighter and public safety.

**Burning Period** That part of each day when fires spread most rapidly.

**Confine** Confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions (burnout, helicopter water drops, etc.) and use of natural topographic features, fuel, and weather factors.

**Contain/Control** These terms, when used in the context of suppression strategies, are confusing since they also have tactical meanings. Containment and Control will continue to be used to represent the status of a particular fire for reporting purposes (e.g., a controlled fire, date of control, date of containment, etc.) and not to represent a type of management strategy.

**Contingency Plan** A back up plan of action for implementation when actions described in the primary plan are no longer appropriate. On prescribed fires these are the actions to be taken if the fire is declared out of prescription and is designated a wildfire.

**Drought Index** A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

**Energy Release Component** A number related to the rate of heat release (BTU's per second) per unit area (square foot) within the flaming zone of the fire. This component of the National Fire Danger Rating System is used by fire managers to assess fire potential in forest fuels.

**Escaped Fire** A fire which has exceeded, or is anticipated to exceed, initial action capabilities or the fire management direction or prescription.

**Expected Weather Conditions** Those weather conditions indicated as common, likely, or highly probable based on current and expected trends and their comparison to historical weather records. These are the most probable weather conditions for this location and time. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "expected weather conditions").

**Experienced Severe Weather Conditions** Those weather conditions that occur infrequently, but have been experienced on the fire site area during the period of weather records. For example, rare event weather conditions that significantly influence fires may have occurred only once, but their record can be used to establish a baseline for a worst-case scenario. These are the most severe conditions that can be expected. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "experienced severe weather conditions").

**Fire Group** A collection of similar habitat types and their associated fire ecology.

**Fireline Intensity** The amount of heat released in BTU's per foot of fire front per second. It related to the difficulty of containment of a fire.

**Fire Management Area (FMA)** A sub-geographic area within an FMU that represents a predefined ultimate acceptable management area for a fire managed for resource benefits. This predefined area can constitute a Maximum Manageable Area (MMA) and is useful for those units having light fuel types conducive to very rapid fire spread rates. Predefinition of these areas removes the time-lag in defining an MMA after ignition and permits preplanning of the fire area; identification of threats to life, property, resources, and boundaries; and identification on initial actions.

**Fire Management Plan (FMP)** A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

**Fire Management Unit (FMU)** Any land management area definable by objectives, topographic features, access, values to be protected, political boundaries, fuel types, or major fire regimes, etc., that set it apart from management characteristics of an adjacent unit. FMUs are delineated in FMP's. These units may have dominant management objectives and preselected strategies assigned to accomplish these objectives.

**Fire Use** The combination of wildland fire use and prescribed fire application to meet resource objectives.

**Fuel Management** The practice of evaluating, planning, and treating wildland fuel to reduce flammability and to reduce its resistance to control through mechanical, chemical, biological, or manual means, including prescribed fire and wildland fire use in support of land management objectives.

**Fuel Model** A simulated fuel complex for which all fuel descriptors required for the solution of a mathematical fire spread model have been specified.

**Fuel Profile** The mosaic of fuel as it occurs on an area of land over time and space.

**Fuel Treatment** The manipulation of wildland fuel, such as lopping, chipping, crushing, piling and burning, or removal for the purpose of reducing its flammability or resistance to control.

**Hazard** The measure of ease of ignition, fire spread potential, and fire suppression difficulty as influenced by the type, volume, size, distribution, condition, arrangement, and location of the fuel profile.

**Holding Actions** Planned actions required to achieve wildland and prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions. For wildland fires managed for resource benefits, an MMA may not be totally naturally defensible. Specific holding actions are developed to preclude fire from exceeding the MMA. For prescribed fires, these actions are developed to restrict the fire inside the planned burn unit. For suppression actions, holding actions may be implemented to prohibit the fire from crossing containment boundaries. These actions may be implemented as firelines are established to limit the spread of fire.

**Initial Attack** An aggressive suppression action consistent with firefighter and public safety and values to be protected.

**Keetch-Byram Drought Index (KBDI)** This index attempts to measure the amount of precipitation necessary to return the soil to full field capacity. It is a closed system ranging from 0-800 units, and represents a moisture regime from 0-8 inches of water through the

**Management Action Points** (also called "trigger points") Either geographic points on the ground or specific points in time where an escalation or alteration of management actions is warranted.

These points are defined and the management actions to be taken are clearly described in an approved Wildland Fire Implementation Plan (WFIP) or Prescribed Fire Plan. Timely implementation of the actions when the fire reaches the action point is generally critical to successful accomplishment of the objectives.

**Maximum Manageable Area (MMA)** The firm limits of management capability to accommodate the social, political, and resource impacts of a wildland fire. Once established as part of an approved plan, the general impact area is fixed and not subject to change. MMAs can be developed as part of the FMP and described as an FMA. They can also be developed as part of the planning and implementation of management actions after a fire has ignited. If they are developed after the ignition, their definition will occur during the Wildland Fire Implementation Plan Stage III process. In the event a fire occurs in a preplanned MMA or FMA and the local unit determines that this MMA is not the best-suited alternative for the present conditions, a new MMA can be developed as part of the Stage III process. Once this occurs, the Stage III MMA becomes the firm limits of the fire and is fixed.

**Mitigation Actions** Those on-the-ground activities that will serve to increase the defensibility of the MMA; check, direct, or delay the spread of fire; and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical nonfire tasks, specific fire applications, and limited suppression actions. These actions will be used to construct firelines, reduce excessive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "blacklines" through controlled burnouts, and to limit fire spread and behavior.

**Most Cost-Efficient Fuel Profile** The fuel profile that minimizes the sum of presuppression cost, including fuel treatment, suppression cost, and net value change.

**Most Efficient Level** The fire management program budget level that results in the minimum cost plus net value change (C+NVC).

**National Fire Management Analysis System (NFMAS)** The fire management analysis process providing input for Forest planning and Forest and Regional fire program development and budgeting

**Natural Fuel** Fuel comprised of combustible wildland vegetation resulting from natural processes and not directly generated or altered by management practices, including fuel that has accumulated as a result of fire exclusion.

**Natural Ignition** An ignition resulting from any natural cause.

**Net Value Change** The sum of the changes in resource values on a land area that results from increases (benefits) and decreased (damages) in resource outputs as a consequence of fire

**Preparedness** Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination. This term replaces presuppression.

**Preparedness Plan** A plan providing for timely recognition of approaching critical fire situations, priority setting, the deployment of forces, and other actions to respond to those situations.

**Prescribed Fire** Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire.

**Prescribed Fire Plan** A plan required for each fire application ignited by managers. The plan is prepared by qualified personnel and approved by the appropriate agency administrator prior to



implementation. Each plan follows specific agency direction and includes critical elements described in agency manuals.

**Prescribed Natural Fire (PNF)** This term no longer represents a type of fire and has no further use other than in historical descriptions. This term is replaced by wildland fire use.

**Prescription** Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

**Risk Assessment** Process used in prescribed fires or wildland fire use planning to determine the level of risk. The risk assessment is documented and used by the approving official to make informed decisions. The risk assessment is completed in the Stage III Long-Term Implementation Action Plan.

**Supplemental Protection** The increased resources assigned to protect activity fuel from wildfire in lieu of fuel treatment.

**Trigger Points** See Management Action Points.

**Wildfire** An unwanted wildland fire.

**Wildland Fire** Any nonstructure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildfires and prescribed natural fires.

**Wildland Fire Implementation Plan (WFIP)** A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits. A full WFIP consists of three stages. Different levels of completion may occur for differing management strategies (i.e., fires managed for resource benefits will have two-three stages of the WFIP completed while some fires that receive a suppression response may only have a portion of Stage I completed).

**Wildland Fire Management Program** The full range of activities and functions necessary for planning, preparedness, emergency rehabilitation of wildland fires, and prescribed fire operations, including nonactivity fuels management to reduce risks to public safety and to restore and sustain ecosystem health.

**Wildland Fire Situation Analysis (WFSA)** A decision making process that evaluates alternative management strategies against selected safety, environmental, social, political, and resource management objectives.

**Wildland Fire Suppression** An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

**Wildland Fire Use** The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMPs. Operational management is described in the WFIP. Wildland fire use is not to be confused with "fire use" which is a broader term encompassing more than just wildland fires.



**File Code:** 1920/2400/2600/2670/5100

**Date:** May 2, 2005

**Route To:** (Resource Specialists)

**Subject:** Clarification of Targhee RFP Wildland Fire Use Direction in Mgt Prescription Areas 2.6.2 and 5.1.x

**To:** District Rangers, Branch Chiefs

During development of the Wildland Fire Use Guidebooks, there have been several questions regarding application of wildland fire use in specific management prescription areas. This letter clarifies the intent of the direction in several management prescriptions, 2.6.2, 5.1, 5.1.3, and 5.1.4.

The RFP is generally permissive unless specific activities are curtailed or not allowed by forestwide guidance or management prescription guidance. At the time the 1997 RFP was adopted, the term wildland fire use had not been coined. The RFP, however, does have goals to use prescribed fire and managed natural fire “to achieve desirable soil and habitat characteristics, improve forest health, and create or maintain diversity in vegetative structure, composition, and patterns” and to “restore fire as an ecological process”. There are no standards or guidelines specific to wildland fire use or managed natural fire. However, the RFP does contain direction to use vegetation treatments that “emulate natural ecological processes to maintain or restore properly functioning ecosystems”. (RFP, III-6 and III-12)

**Management Prescription 2.6.2: Grizzly Bear Core Area**

The primary emphasis for this prescription is to provide secure habitat for grizzly bears. The prescription direction does not mention managed natural fire or wildland fire use. There are two standards for fire in Rx 2.6.2, one which prohibits prescribed fire and one that states “in the event of a fire that warrants suppression, only minimum impact suppression techniques will be allowed.” This implies that there are fires that do not warrant suppression. The prescription also contains an objective to develop a fire management plan in coordination with any adjacent wilderness fire plans to address wildfires. The Jedediah Smith Wilderness Fire Management Plan (1997), allows managed natural fires. (RFP, III-99)

Since the prescription direction does not prohibit managed natural fire or wildland fire use, it can be applied in this prescription area as described in the Wildland Fire Use Guidebook.

**Management Prescriptions 5.1, 5.1.3, 5.1.4: Timber Management**

The primary emphasis for these prescriptions is on scheduled wood-fiber production and use. Goals are to manage the lands to promote the production of commodity and noncommodity resources. The prescriptions also contain goals to “establish fire

**FIRE USE APPROVAL AUTHORITY Knowledge and Experience Requirements**  
 Caribou-Targhee National Forest - 2005

<b><u>WILDLAND FIRE USE</u></b>	<b><u>KNOWLEDGE REQUIRED TO APPROVE WILDLAND FIRE USE PLANS</u></b>		<b><u>EXPERIENCE REQUIRED TO APPROVE WILDLAND FIRE USE PLANS</u></b>
	<b>Name</b>	<b>Fire Management Leadership<sup>1</sup></b>	<b>Fire Use Applications or Regional Equivalent<sup>2</sup></b>
<b>Line Officers</b>	indicate the knowledge requirement has been met by filling in the most recent date the training was attended; a blank entry indicates the knowledge requirement has not been met		indicate the experience requirement has been met by filling in the most recent date the experience was attained; a blank entry indicates the experience requirement has not been met
<b>Jerry Reese; FS – S.O.</b>	(A) 2003	(A) 1995	(A) 2003
<b>Chris Ourada; FAAPL – S.O.</b>	(A) 2003	(B) 2002, (C) 2001 (D) 1995, (F) 2000 (G) 1999	(B) 2003 (C) 2003
<b>Others who may be delegated WFU approval authority when fully qualified</b>			
<b>Carol Lyle; FEBC – S.O.</b>	(A) 2003	(B) 1988	
<b>John Kidd; FFS – DRD</b>	(A) 2003	(C) 2000, (F) 2000 (G) 1999	(B) 2003 (C) 2003
<b>Kraig Carroll; – FMS S.O.</b>	(A) 2003	(F) 2000	(C) 2003
<b>Dylan Johnson-AFMO-EZ</b>			
<b>Garth Alleman-ZFMO-EZ</b>			
<b>Adrienne Keller; DR- ARD/IPRD</b>	(A) 2003	(A) 1998, (F) 2000	(B) 2003
<b>Robert Mickelsen; DR-DRD</b>	(A) 2004	(B) 2003	(B) 2004 Stage II
<b>Jay Pence; DR- TB RD</b>	(A) 2003	(C) 2004	(B) 2004 Stage II
<b>Dennis Duehren; DR - MRD</b>	(A) 2004	(B) 2003	
<b>Dave Whittekiend; DR - SSRD</b>	(A) 2004	(B) 2001	(B) 2004 Stage II
<b>Larry Zajanc-ZFMO-SZ</b>	(A) 2003		
<b>Ron Dickemore DR - PAD</b>	(A) 2004	(B) 2005	
<b>Jerry Tower DR - PRD</b>	(A) 2004	(B) 2003	
<b>Greg Burch ZFMO, PRD</b>		(A) 2005, (B)2005	
<b>Jeff Hill AFMO, PRD</b>		(A), 2005), (B)2005	

<sup>1</sup> may be met by completing (A) forest sponsored wildland fire use workshop or meeting that addresses the following: Required elements of a wildland fire implementation plan (WFIP), Review of Wildland and Prescribed Fire Management Policy Implementation Procedures and Reference Guide, Review of FSM 5140 and regional fire-use supplement, Qualifications of fire personnel, 5109.17, Developing and using worst-case scenarios, Discuss lessons learned from past wildland fire-for resource benefit fire events.

<sup>2</sup> may be met by completing (A) National Fire Management Leadership course, or (B) Northern Rockies Local Fire Management Leadership course (formerly Local Fire Management for Agency Administrators Local Fire Management Leadership). (C) S-580 Advanced Fire Use Applications, or former courses: (D) National Parks and Wilderness Fire Management (prior to 2000), or (E) Northern Region Wilderness Fire Management (prior to 2000), or (F) Wildland Fire Use workshop (2000), (G) Wildland Fire Use Policy sessions (1998, 1999), or (H) Managing Wildland Fire for Resource Benefits course.

<sup>3</sup> may be met by (A) prior experience as approving official for a WFU event, or (B) on-the-job training assignment with fully qualified WFU approving official, developing WFIP through Stage III, or (C) prior assignment as a unit fire management officer with WFU program experience.

<b><u>PRESCRIBED FIRE</u></b>	<b>KNOWLEDGE REQUIRED TO APPROVE PRESCRIBED FIRE PLANS</b>		<b>EXPERIENCE REQUIRED TO APPROVE PRESCRIBED FIRE PLANS</b>
	<b>Fire Management Leadership<sup>4</sup></b>	<b>Regional LO Wildland Fire Use &amp; Prescribed Fire Workshop<sup>5</sup></b>	<b>Prescribed Fire Approval Experience<sup>6</sup></b>
Line Officers	indicate the knowledge requirement has been met by filling in the most recent date the training was attended; a blank entry indicates the knowledge requirement has not been met		indicate the experience requirement has been met by filling in the most recent date the experience was attained; a blank entry indicates the experience requirement has not been met
<b>Jerry Reese; FS- C-T NF -SO</b>	(A) 2004	(A) 1995	(A) 2003
<b>Carol Lyle; FEBC – C-T NF - SO</b>	(A) 2004		
<b>Chris Ourada; FAAPL C-T NF-SO</b>	(A) 2004	(B) 2002	(C) 2003
<b>Adrienne Keller; DR- ARD/IPRD</b>	(A) 2004	(A) 1998	(A) 2004
<b>Robert Mickelsen; DR-DRD</b>	(A) 2004	(B) 2003	(A) 2004
<b>Jay Pence; DR- TB RD</b>	(A) 2004	(B) 2003	(A) 2004 (C) 2000
<b>Ron Dickemore; DR-PRD</b>	(A) 2004	(B) 1998	(A) 2004
<b>Jerald Tower; DR - WRD</b>	(A) 2004	(B) 2003	(A) 2004
<b>Dennis Duehren; DR - MRD</b>	(A) 2004	(B) 2003	(A) 2004
<b>Dave Whittekiend; DR - SSRD</b>	(A) 2004	(B) 2001	(A) 2004 (B) 2001
<b>John Kidd FFS – S.O.</b>	(A) 2004		
<b>Gina Martin FP – S.O.</b>	(A) 2004		

<sup>4</sup> may be met by completing (A) *Forest sponsored prescribed fire workshop or meeting that addresses the following: Required elements of the RX Burn Plan, Use of Prescribed Fire Complexity Rating System Guide, Review of Wildland and Prescribed Fire Management Policy Implementation Procedures, Review of FSM 4150, Preparation of implementation of contingency and holding plans, Qualifications of fire-use personnel listed in FSH 5109.17, Developing and using worst-case scenarios, Discuss lessons learned from past prescribed fire events.* To maintain qualifications and keep current on Agency policy, line officers must attend this workshop once every 3-years

<sup>5</sup> may be met by completion of (A) *Fire Management for Agency Administrators*, **or** (B) *Regional or National Fire Management Leadership course*.

<sup>6</sup> may be met by (A) *prior experience as approving official for prescribed fire*, **or** (B) *on-the-job training assignment with fully qualified prescribed fire approving official*, **or** (C) *prior assignment as a unit fire management officer with prescribed fire program experience*.

**Caribou-Targhee National Forest  
WFSA Signature Authority 2005**

<b><u>C-T WFSA Approval Authority</u></b>  Name	<b>Knowledge Required to Approve WFSAs<sup>1</sup></b>	<b>Alternative Until Quals obtained<sup>2</sup></b>
<b>*Jerry Reese (up to \$10 MM)</b>	(A) 2003 (B) 1995	(C) 2002
<b>*Robert Mickelsen (up to \$2 MM)</b>	(A) 2003 (B) 2003	(C) 2002
<b>Adrienne Keller</b>	(A) 1994 (B) 1998	(C) 2002
<b>Jay Pence</b>	(B) 2003	(C) 2002
<b>Ron Dickemore</b>	(A) 1988 (B) 2005	(C) 2002
<b>Jerald Tower</b>	(B) 2003	(C) 2002
<b>Dennis Duehren</b>	(B) 2003	(C) 2002
<b>Dave Whittekiend</b>	(A) 2000 (B) 2001	(C) 2002
<b>Carol Lyle</b>		(C) 2002

\*Individuals with current complete signing authority.

<sup>1</sup>(A) Participated in at least 1 WFSA certification process, **and** (B) completed Local Fire Management Leadership Training.

<sup>2</sup>(C)Attend a Regional Line Officer Seminar covering WFSA, DOA etc.. **and** Assign a qualified line officer and WFSA specialist to mentor and advise the WFSA/DOA process.

# GLOSSARY

**Appropriate Management Response** Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

**Appropriate Suppression Response** Specific actions taken in response to a wildland fire, with priority consideration given to firefighter and public safety.

**Burning Period** That part of each day when fires spread most rapidly.

**Confine** Confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions (burnout, helicopter water drops, etc.) and use of natural topographic features, fuel, and weather factors.

**Contain/Control** These terms, when used in the context of suppression strategies, are confusing since they also have tactical meanings. Containment and Control will continue to be used to represent the status of a particular fire for reporting purposes (e.g., a controlled fire, date of control, date of containment, etc.) and not to represent a type of management strategy.

**Contingency Plan** A back up plan of action for implementation when actions described in the primary plan are no longer appropriate. On prescribed fires these are the actions to be taken if the fire is declared out of prescription and is designated a wildfire.

**Drought Index** A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

**Energy Release Component** A number related to the rate of heat release (BTU's per second) per unit area (square foot) within the flaming zone of the fire. This component of the National Fire Danger Rating System is used by fire managers to assess fire potential in forest fuels.

**Escaped Fire** A fire which has exceeded, or is anticipated to exceed, initial action capabilities or the fire management direction or prescription.

**Expected Weather Conditions** Those weather conditions indicated as common, likely, or highly probable based on current and expected trends and their comparison to historical weather records. These are the most probable weather conditions for this location and time. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "expected weather conditions").

**Experienced Severe Weather Conditions** Those weather conditions that occur infrequently, but have been experienced on the fire site area during the period of weather records. For example, rare event weather conditions that significantly influence fires may have occurred only once, but their record can be used to establish a baseline for a worst-case scenario. These are the most severe conditions that can be expected. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "experienced severe weather conditions").

**Fire Group** A collection of similar habitat types and their associated fire ecology.

**Fireline Intensity** The amount of heat released in BTU's per foot of fire front per second. It related to the difficulty of containment of a fire.

**Fire Management Area (FMA)** A sub-geographic area within an FMU that represents a predefined ultimate acceptable management area for a fire managed for resource benefits. This predefined area can constitute a Maximum Manageable Area (MMA) and is useful for those units having light fuel types conducive to very rapid fire spread rates. Predefinition of these areas removes the time-lag in defining an MMA after ignition and permits preplanning of the fire area; identification of threats to life, property, resources, and boundaries; and identification on initial actions.

**Fire Management Plan (FMP)** A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

**Fire Management Unit (FMU)** Any land management area definable by objectives, topographic features, access, values to be protected, political boundaries, fuel types, or major fire regimes, etc., that set it apart from management characteristics of an adjacent unit. FMUs are delineated in FMP's. These units may have dominant management objectives and preselected strategies assigned to accomplish these objectives.

**Fire Use** The combination of wildland fire use and prescribed fire application to meet resource objectives.

**Fuel Management** The practice of evaluating, planning, and treating wildland fuel to reduce flammability and to reduce its resistance to control through mechanical, chemical, biological, or manual means, including prescribed fire and wildland fire use in support of land management objectives.

**Fuel Model** A simulated fuel complex for which all fuel descriptors required for the solution of a mathematical fire spread model have been specified.

**Fuel Profile** The mosaic of fuel as it occurs on an area of land over time and space.

**Fuel Treatment** The manipulation of wildland fuel, such as lopping, chipping, crushing, piling and burning, or removal for the purpose of reducing its flammability or resistance to control.

**Hazard** The measure of ease of ignition, fire spread potential, and fire suppression difficulty as influenced by the type, volume, size, distribution, condition, arrangement, and location of the fuel profile.

**Holding Actions** Planned actions required to achieve wildland and prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions. For wildland fires managed for resource benefits, an MMA may not be totally naturally defensible. Specific holding actions are developed to preclude fire from exceeding the MMA. For prescribed fires, these actions are developed to restrict the fire inside the planned burn unit. For suppression actions, holding actions may be implemented to prohibit the fire from crossing containment boundaries. These actions may be implemented as firelines are established to limit the spread of fire.

**Initial Attack** An aggressive suppression action consistent with firefighter and public safety and values to be protected.

**Keetch-Byram Drought Index (KBDI)** This index attempts to measure the amount of precipitation necessary to return the soil to full field capacity. It is a closed system ranging from 0-800 units, and represents a moisture regime from 0-8 inches of water through the

**Management Action Points** (also called "trigger points") Either geographic points on the ground or specific points in time where an escalation or alteration of management actions is warranted.

These points are defined and the management actions to be taken are clearly described in an approved Wildland Fire Implementation Plan (WFIP) or Prescribed Fire Plan. Timely implementation of the actions when the fire reaches the action point is generally critical to successful accomplishment of the objectives.

**Maximum Manageable Area (MMA)** The firm limits of management capability to accommodate the social, political, and resource impacts of a wildland fire. Once established as part of an approved plan, the general impact area is fixed and not subject to change. MMAs can be developed as part of the FMP and described as an FMA. They can also be developed as part of the planning and implementation of management actions after a fire has ignited. If they are developed after the ignition, their definition will occur during the Wildland Fire Implementation Plan Stage III process. In the event a fire occurs in a preplanned MMA or FMA and the local unit determines that this MMA is not the best-suited alternative for the present conditions, a new MMA can be developed as part of the Stage III process. Once this occurs, the Stage III MMA becomes the firm limits of the fire and is fixed.

**Mitigation Actions** Those on-the-ground activities that will serve to increase the defensibility of the MMA; check, direct, or delay the spread of fire; and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical nonfire tasks, specific fire applications, and limited suppression actions. These actions will be used to construct firelines, reduce excessive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "blacklines" through controlled burnouts, and to limit fire spread and behavior.

**Most Cost-Efficient Fuel Profile** The fuel profile that minimizes the sum of presuppression cost, including fuel treatment, suppression cost, and net value change.

**Most Efficient Level** The fire management program budget level that results in the minimum cost plus net value change (C+NVC).

**National Fire Management Analysis System (NFMAS)** The fire management analysis process providing input for Forest planning and Forest and Regional fire program development and budgeting

**Natural Fuel** Fuel comprised of combustible wildland vegetation resulting from natural processes and not directly generated or altered by management practices, including fuel that has accumulated as a result of fire exclusion.

**Natural Ignition** An ignition resulting from any natural cause.

**Net Value Change** The sum of the changes in resource values on a land area that results from increases (benefits) and decreased (damages) in resource outputs as a consequence of fire

**Preparedness** Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination. This term replaces presuppression.

**Preparedness Plan** A plan providing for timely recognition of approaching critical fire situations, priority setting, the deployment of forces, and other actions to respond to those situations.

**Prescribed Fire** Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire.

**Prescribed Fire Plan** A plan required for each fire application ignited by managers. The plan is prepared by qualified personnel and approved by the appropriate agency administrator prior to



implementation. Each plan follows specific agency direction and includes critical elements described in agency manuals.

**Prescribed Natural Fire (PNF)** This term on longer represents a type of fire and has no further use other than in historical descriptions. This term is replaced by wildland fire use.

**Prescription** Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

**Risk Assessment** Process used in prescribed fires or wildland fire use planning to determine the level of risk. The risk assessment is documented and used by the approving official to make informed decisions. The risk assessment is completed in the Stage III Long-Term Implementation Action Plan.

**Supplemental Protection** The increased resources assigned to protect activity fuel from wildfire in lieu of fuel treatment.

**Trigger Points** See Management Action Points.

**Wildfire** An unwanted wildland fire.

**Wildland Fire** Any nonstructure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildfires and prescribed natural fires.

**Wildland Fire Implementation Plan (WFIP)** A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits. A full WFIP consists of three stages. Different levels of completion may occur for differing management strategies (i.e., fires managed for resource benefits will have two-three stages of the WFIP completed while some fires that receive a suppression response may only have a portion of Stage I completed.

**Wildland Fire Management Program** The full range of activities and functions necessary for planning, preparedness, emergency rehabilitation of wildland fires, and prescribed fire operations, including nonactivity fuels management to reduce risks to public safety and to restore and sustain ecosystem health.

**Wildland Fire Situation Analysis (WFSA)** A decision making process that evaluates alternative management strategies against selected safety, environmental, social, political, and resource management objectives.

**Wildland Fire Suppression** An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

**Wildland Fire Use** The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMPs. Operational management is described in the WFIP. Wildland fire use is not to be confused with "fire use" which is a broader term encompassing more than just wildland fires.



# GLOSSARY

**Appropriate Management Response** Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

**Appropriate Suppression Response** Specific actions taken in response to a wildland fire, with priority consideration given to firefighter and public safety.

**Burning Period** That part of each day when fires spread most rapidly.

**Confine** Confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions (burnout, helicopter water drops, etc.) and use of natural topographic features, fuel, and weather factors.

**Contain/Control** These terms, when used in the context of suppression strategies, are confusing since they also have tactical meanings. Containment and Control will continue to be used to represent the status of a particular fire for reporting purposes (e.g., a controlled fire, date of control, date of containment, etc.) and not to represent a type of management strategy.

**Contingency Plan** A back up plan of action for implementation when actions described in the primary plan are no longer appropriate. On prescribed fires these are the actions to be taken if the fire is declared out of prescription and is designated a wildfire.

**Drought Index** A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

**Energy Release Component** A number related to the rate of heat release (BTU's per second) per unit area (square foot) within the flaming zone of the fire. This component of the National Fire Danger Rating System is used by fire managers to assess fire potential in forest fuels.

**Escaped Fire** A fire which has exceeded, or is anticipated to exceed, initial action capabilities or the fire management direction or prescription.

**Expected Weather Conditions** Those weather conditions indicated as common, likely, or highly probable based on current and expected trends and their comparison to historical weather records. These are the most probable weather conditions for this location and time. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "expected weather conditions").

**Experienced Severe Weather Conditions** Those weather conditions that occur infrequently, but have been experienced on the fire site area during the period of weather records. For example, rare event weather conditions that significantly influence fires may have occurred only once, but their record can be used to establish a baseline for a worst-case scenario. These are the most severe conditions that can be expected. These conditions are used in making fire behavior forecasts for different scenarios (one necessary scenario involves fire behavior prediction under "experienced severe weather conditions").

**Fire Group** A collection of similar habitat types and their associated fire ecology.

**Fireline Intensity** The amount of heat released in BTU's per foot of fire front per second. It related to the difficulty of containment of a fire.

**Fire Management Area (FMA)** A sub-geographic area within an FMU that represents a predefined ultimate acceptable management area for a fire managed for resource benefits. This predefined area can constitute a Maximum Manageable Area (MMA) and is useful for those units having light fuel types conducive to very rapid fire spread rates. Predefinition of these areas removes the time-lag in defining an MMA after ignition and permits preplanning of the fire area; identification of threats to life, property, resources, and boundaries; and identification on initial actions.

**Fire Management Plan (FMP)** A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

**Fire Management Unit (FMU)** Any land management area definable by objectives, topographic features, access, values to be protected, political boundaries, fuel types, or major fire regimes, etc., that set it apart from management characteristics of an adjacent unit. FMUs are delineated in FMP's. These units may have dominant management objectives and preselected strategies assigned to accomplish these objectives.

**Fire Use** The combination of wildland fire use and prescribed fire application to meet resource objectives.

**Fuel Management** The practice of evaluating, planning, and treating wildland fuel to reduce flammability and to reduce its resistance to control through mechanical, chemical, biological, or manual means, including prescribed fire and wildland fire use in support of land management objectives.

**Fuel Model** A simulated fuel complex for which all fuel descriptors required for the solution of a mathematical fire spread model have been specified.

**Fuel Profile** The mosaic of fuel as it occurs on an area of land over time and space.

**Fuel Treatment** The manipulation of wildland fuel, such as lopping, chipping, crushing, piling and burning, or removal for the purpose of reducing its flammability or resistance to control.

**Hazard** The measure of ease of ignition, fire spread potential, and fire suppression difficulty as influenced by the type, volume, size, distribution, condition, arrangement, and location of the fuel profile.

**Holding Actions** Planned actions required to achieve wildland and prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions. For wildland fires managed for resource benefits, an MMA may not be totally naturally defensible. Specific holding actions are developed to preclude fire from exceeding the MMA. For prescribed fires, these actions are developed to restrict the fire inside the planned burn unit. For suppression actions, holding actions may be implemented to prohibit the fire from crossing containment boundaries. These actions may be implemented as firelines are established to limit the spread of fire.

**Initial Attack** An aggressive suppression action consistent with firefighter and public safety and values to be protected.

**Keetch-Byram Drought Index (KBDI)** This index attempts to measure the amount of precipitation necessary to return the soil to full field capacity. It is a closed system ranging from 0-800 units, and represents a moisture regime from 0-8 inches of water through the

**Management Action Points** (also called "trigger points") Either geographic points on the ground or specific points in time where an escalation or alteration of management actions is warranted.

These points are defined and the management actions to be taken are clearly described in an approved Wildland Fire Implementation Plan (WFIP) or Prescribed Fire Plan. Timely implementation of the actions when the fire reaches the action point is generally critical to successful accomplishment of the objectives.

**Maximum Manageable Area (MMA)** The firm limits of management capability to accommodate the social, political, and resource impacts of a wildland fire. Once established as part of an approved plan, the general impact area is fixed and not subject to change. MMAs can be developed as part of the FMP and described as an FMA. They can also be developed as part of the planning and implementation of management actions after a fire has ignited. If they are developed after the ignition, their definition will occur during the Wildland Fire Implementation Plan Stage III process. In the event a fire occurs in a preplanned MMA or FMA and the local unit determines that this MMA is not the best-suited alternative for the present conditions, a new MMA can be developed as part of the Stage III process. Once this occurs, the Stage III MMA becomes the firm limits of the fire and is fixed.

**Mitigation Actions** Those on-the-ground activities that will serve to increase the defensibility of the MMA; check, direct, or delay the spread of fire; and minimize threats to life, property, and resources. Mitigation actions may include mechanical and physical nonfire tasks, specific fire applications, and limited suppression actions. These actions will be used to construct firelines, reduce excessive fuel concentrations, reduce vertical fuel continuity, create fuel breaks or barriers around critical or sensitive sites or resources, create "blacklines" through controlled burnouts, and to limit fire spread and behavior.

**Most Cost-Efficient Fuel Profile** The fuel profile that minimizes the sum of presuppression cost, including fuel treatment, suppression cost, and net value change.

**Most Efficient Level** The fire management program budget level that results in the minimum cost plus net value change (C+NVC).

**National Fire Management Analysis System (NFMAS)** The fire management analysis process providing input for Forest planning and Forest and Regional fire program development and budgeting

**Natural Fuel** Fuel comprised of combustible wildland vegetation resulting from natural processes and not directly generated or altered by management practices, including fuel that has accumulated as a result of fire exclusion.

**Natural Ignition** An ignition resulting from any natural cause.

**Net Value Change** The sum of the changes in resource values on a land area that results from increases (benefits) and decreased (damages) in resource outputs as a consequence of fire

**Preparedness** Activities that lead to a safe, efficient, and cost-effective fire management program in support of land and resource management objectives through appropriate planning and coordination. This term replaces presuppression.

**Preparedness Plan** A plan providing for timely recognition of approaching critical fire situations, priority setting, the deployment of forces, and other actions to respond to those situations.

**Prescribed Fire** Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire.

**Prescribed Fire Plan** A plan required for each fire application ignited by managers. The plan is prepared by qualified personnel and approved by the appropriate agency administrator prior to

implementation. Each plan follows specific agency direction and includes critical elements described in agency manuals.

**Prescribed Natural Fire (PNF)** This term no longer represents a type of fire and has no further use other than in historical descriptions. This term is replaced by wildland fire use.

**Prescription** Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

**Risk Assessment** Process used in prescribed fires or wildland fire use planning to determine the level of risk. The risk assessment is documented and used by the approving official to make informed decisions. The risk assessment is completed in the Stage III Long-Term Implementation Action Plan.

**Supplemental Protection** The increased resources assigned to protect activity fuel from wildfire in lieu of fuel treatment.

**Trigger Points** See Management Action Points.

**Wildfire** An unwanted wildland fire.

**Wildland Fire** Any nonstructure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildfires and prescribed natural fires.

**Wildland Fire Implementation Plan (WFIP)** A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits. A full WFIP consists of three stages. Different levels of completion may occur for differing management strategies (i.e., fires managed for resource benefits will have two-three stages of the WFIP completed while some fires that receive a suppression response may only have a portion of Stage I completed).

**Wildland Fire Management Program** The full range of activities and functions necessary for planning, preparedness, emergency rehabilitation of wildland fires, and prescribed fire operations, including nonactivity fuels management to reduce risks to public safety and to restore and sustain ecosystem health.

**Wildland Fire Situation Analysis (WFSA)** A decision making process that evaluates alternative management strategies against selected safety, environmental, social, political, and resource management objectives.

**Wildland Fire Suppression** An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

**Wildland Fire Use** The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMPs. Operational management is described in the WFIP. Wildland fire use is not to be confused with "fire use" which is a broader term encompassing more than just wildland fires.



# USEFUL WEBSITES

Federal Wildland Fire Policy

<http://www.fs.fed.us/land/wdfire.htm>

Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide

[http://www.fs.fed.us/fire/fireuse/wildland\\_fire\\_use/ref\\_guide/index.html](http://www.fs.fed.us/fire/fireuse/wildland_fire_use/ref_guide/index.html)

Revised 5140

<http://www.fs.fed.us/fire/fireuse/rxfire/5140/index.html>

Eastern Great Basin Predictive Services

<http://www.blm.gov/utah/eqbcc/>

National Wildfire Coordinating Group

<http://www.nwcg.gov>

WFAS Wildland Fire Assessment System

<http://www.fs.fed.us/land/wfas>

WFSA Plus99

<http://www.fs.fed.us/fire/wfsa/>

Western Regional Climate Center

<http://www.wrcc.dri.edu/>

National Weather Service Western Region Headquarters

<http://www.wrh.noaa.gov/>

National Weather Service Forecast Office Pocatello (Fire Weather Forecast)

<http://www.wrh.noaa.gov/pih/>

Island Park RAWS

[http://www.met.utah.edu/cgi-bin/roman/meso\\_base.cgi?stn=IPF1&time=GMT](http://www.met.utah.edu/cgi-bin/roman/meso_base.cgi?stn=IPF1&time=GMT)

Moody RAWS

[http://www.met.utah.edu/cgi-bin/roman/meso\\_base.cgi?stn=MYF1&time=GMT](http://www.met.utah.edu/cgi-bin/roman/meso_base.cgi?stn=MYF1&time=GMT)

Pine Creek RAWS

[http://www.met.utah.edu/cgi-bin/roman/meso\\_base.cgi?stn=PCRI1&time=GMT](http://www.met.utah.edu/cgi-bin/roman/meso_base.cgi?stn=PCRI1&time=GMT)

RAWS Links

<http://www.fs.fed.us/raws/links.shtml>

ROMAN (real-time observation monitor and analysis network)

<http://www.met.utah.edu/roman/>

Montana/Idaho Airshed Group

<http://www.smokemu.org/>

Ventilation Climate Information System

<http://www.fs.fed.us/pnw/fera/vent/>

Fire Effects Information System

<http://www.fs.fed.us/database/feis/welcome.htm>

TerraServer

<http://terraserver.microsoft.com/>

Topozone

<http://www.topozone.com/map.asp?lat=43.4316&lon=-111.347&s=25&size=m>

## List of References

Anderson, Hal E.

1982. Aids to Determining Fuel Models For estimating Fire Behavior. General Technical Report INT-122. Ogden, UT: USDA, Forest Service, Intermountain Forest and Range Experiment Station.

Bowerman, T.S., Dorr, J., Leahy, S., Warrick, J. 1998 Targhee National Forest Subsections and Landtype Associations

Bradley, Anne F.; Fischer, William C.; Noste, Nonan V.

1992 Fire Ecology of Forest Habitat Types of Western Wyoming an Southeast Idaho. General Technical Report INT 290. Ogden UT.;USDA, Forest Service, Intermountain Forest and Range Experiment Station. 92p.

Deeming, John E.; Burgan, Robert, E.; Cohen, Jack, D.

1978. The National Fire Danger Rating System; General Technical Report INT-39. Ogden UT.; USDA, Forest Service, Intermountain Forest and Range Experiment Station.

Great Basin Coordinating Group 2002. Great Basin Mobilization Guide.

Gruell, George E. 1980 Fire's Influence on wildlife habitat on the Bridger-Teton National Forest, Wyoming. Volume 1 photographic record and analysis. USDA For. Serv. Res. Pap. INT-235, 207p. Intermt. For. and Range Exp. Stn., Ogden, Utah.

Greater Yellowstone Coordinating Committee 2000

The Greater Yellowstone Area Interagency Fire Management Planning and Coordination Guide

Interagency Grizzly Bear Committee

1986 Interagency grizzly bear guidelines.

Main, W.A., D.M. Paananen, and, and Robert E. Burgan. 1990. FIREFAMILY 1988. USDA For.

Serv. Res. Paper INT-115, 40p. Intermountain Forest & Range Experiment Station, St. Paul, MN.

U.S. Department of Agriculture, Forest Service.

July 1996. Ecological unit inventory of the Targhee National Forest, Idaho. Interim report #4. St. Anthony, Id: Targhee National Forest.

United States Department of Agriculture, Forest Service 1997Jedediah Smith Wilderness Fire Management Plan.

United States Department of Agriculture, Forest Service 1995. Lee Metcalf Wilderness Fire Management Guidebook

United States Department of Agriculture, Forest Service 1999. Selway Bitterroot Wildland Fire Use Guidebook.

United States Department of Agriculture, Forest Service 1997 Revised Forest Plan Targhee National Forest.

United States Department of Agriculture, Forest Service 1997 Final Environmental Impact Statement 1997 Revised Forest Plan Targhee National Forest.

United States Department of Agriculture, Forest Service 2001. Sevier Wildland Fire Use Implementation Plan.



United States Departments of Agriculture and Interior. 1998  
Federal Wildland and Prescribed Fire Management Policy Implementation Procedures Reference  
Guide. 82pp.

Wilderness Act. 1964 Act of September 3, 1964. Public Law 88-577. 78 Stat. 890.