

# Elmore County, Idaho, Wildland-Urban Interface Wildfire Mitigation Plan

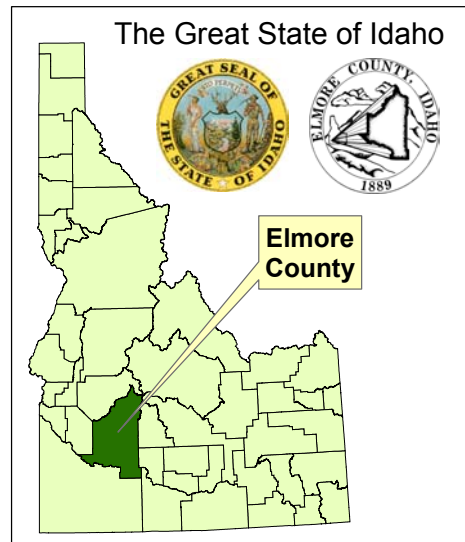
**Main Document**

**May 10, 2004**

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**Vision:** *Institutionalize and promote a countywide wildfire hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Elmore County.*

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This plan was developed by the Elmore County Wildland-Urban Interface Wildfire Mitigation Plan Committee in cooperation with Northwest Management, Inc., 233 E. Palouse River Dr., P.O. Box 9748, Moscow, ID 83843, Tel: 208-883-4488, [www.Consulting-Foresters.com](http://www.Consulting-Foresters.com)

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## Acknowledgments

This Wildland-Urban Interface Wildfire Mitigation Plan represents the efforts and cooperation of a number of organizations and agencies, through the commitment of people working together to improve the preparedness for wildfire events while reducing factors of risk.

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Elmore County Commissioners  
and the employees of Elmore County



Southwest Idaho Resource Conservation and  
Development Area

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USDI Bureau of Land Management  
Lower Snake River District  
Upper Snake River District



USDA Forest Service  
Boise National Forest  
Sawtooth National Forest

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Idaho Department of Lands

Mountain Home Rural Fire Department  
Mountain Home City Fire Department  
King Hill Rural Fire Department  
Atlanta Rural Fire Department  
Oasis Volunteer Fire Department  
Grand View Fire Department  
&

Local Businesses and  
Citizens of Elmore County

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To obtain copies of this plan contact:

**Elmore County Commissioners Office**  
Elmore County Courthouse  
150 South 4th East  
Mountain Home, Idaho 83647

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# Chapter I: Overview of this Plan and its Development

## 1 Introduction

This Wildland-Urban Interface Wildland Fire Mitigation Plan for Elmore County, Idaho, is the result of analyses, professional cooperation and collaboration, assessments of wildfire risks and other factors considered with the intent to reduce the potential for wildfires to threaten people, structures, infrastructure, and unique ecosystems in Elmore County, Idaho. The planning team responsible for implementing this project was led by the Elmore County Commissioners. Agencies and organizations that participated in the planning process included:

- USDI Bureau of Land Management (also providing funding through the National Fire Plan)
- USDA Forest Service
- Idaho Department of Lands
- Southwest Idaho Resource Conservation and Development Council
- Mountain Home Rural Fire Department
- Mountain Home City Fire Department
- King Hill Rural Fire Department
- Atlanta Rural Fire Department
- Grand View Fire Department
- Oasis Volunteer Fire Department
- Northwest Management, Inc.

The Elmore County Commissioners, working cooperatively with the Southwestern Idaho RC&D, solicited competitive bids from companies to provide the service of leading the assessment and the writing of the **Elmore County Wildland-Urban Interface Wildland Fire Mitigation Plan**. The Commissioners selected Northwest Management, Inc., to provide this service. Northwest Management, Inc., is a professional natural resources consulting firm located in Moscow, Idaho. Established in 1984 NMI provides natural resource management services across the USA. The Project Manager from Northwest Management, Inc., was Dr. William E. Schlosser, a professional forester and regional planner. The County also hired a local coordinator to serve as liaison between Northwest Management, Inc., and the Commissioner's Office, local citizenry, and others. The County hired Wayne Forrey, AICP, owner of Pathway Planners Consultants. Mr. Forrey is a professional planner with experience in land use planning in Elmore County and the surrounding region.

### 1.1 *Goals and Guiding Principles*

#### 1.1.1 **Federal Emergency Management Agency Philosophy**

Effective November 1, 2004, a Local Hazard Mitigation Plan approved by the Federal Emergency Management Agency (FEMA) is required for Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Program (PDM) eligibility. The HMGP and PDM program

provide funding, through state emergency management agencies, to support local mitigation planning and projects to reduce potential disaster damages.

The new local hazard mitigation plan requirements for HMGP and PDM eligibility is based on the Disaster Mitigation Act of 2000, which amended the Stafford Disaster Relief Act to promote and integrated, cost effective approach to mitigation. Local hazard mitigation plans must meet the minimum requirements of the Stafford Act-Section 322, as outlined in the criteria contained in 44 CFR Part 201. The plan criteria covers the planning process, risk assessment, mitigation strategy, plan maintenance, and adoption requirements.

FEMA will only review a local hazard mitigation plan submitted through the appropriate State Hazard Mitigation Officer (SHMO). Draft versions of local hazard mitigation plans will not be reviewed by FEMA. FEMA will review the final version of a plan prior to local adoption to determine if the plan meets the criteria, but FEMA will be unable to approve it prior to adoption. In Idaho the SHMO is:

Idaho Bureau of Disaster Services  
4040 Guard Street, Bldg 600  
Boise, ID 83705  
Jonathan Perry, 208-334-2336 Ext. 271

A FEMA designed plan will be evaluated on its adherence to a variety of criteria.

- Adoption by the Local Governing Body
- Multi-jurisdictional Plan Adoption
- Multi-jurisdictional Planning Participation
- Documentation of Planning Process
- Identifying Hazards
- Profiling Hazard Events
- Assessing Vulnerability: Identifying Assets
- Assessing Vulnerability: Estimating Potential Losses
- Assessing Vulnerability: Analyzing Development Trends
- Multi-Jurisdictional Risk Assessment
- Local Hazard Mitigation Goals
- Identification and Analysis of Mitigation Measures
- Implementation of Mitigation Measures
- Multi-Jurisdictional Mitigation Strategy
- Monitoring, Evaluating, and Updating the Plan
- Implementation Through Existing Programs
- Continued Public Involvement

### **1.1.2 Additional State and Federal Guidelines Adopted**

The Wildland-Urban Interface Wildfire Mitigation Plan component of this All Hazards Mitigation Plan will include compatibility with FEMA requirements while also adhering to the guidelines proposed in the National Fire Plan, the Idaho Statewide Implementation Plan, and the Healthy Forests Restoration Act (2003). This Wildland-Urban Interface Wildland Fire Mitigation Plan has been prepared in compliance with:

- The National Fire Plan; A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan–May 2002.
- The Idaho Statewide Implementation Strategy for the National Fire Plan–July 2002.

- Healthy Forests Restoration Act (2003)
- The Federal Emergency Management Agency's Region 10 guidelines for a Local Hazard Mitigation Plan as defined in 44 CFR parts 201 and 206, and as related to a fire mitigation plan chapter of a Natural Hazards Mitigation Plan.

***“When implemented, the 10-Year Comprehensive Strategy will contribute to reducing the risks of wildfire to communities and the environment by building collaboration at all levels of government.”***  
 - The NFP 10-Year Comprehensive Strategy August 2001

The objective of combining these four complimentary guidelines is to facilitate an integrated wildland fire risk assessment, identify pre-hazard mitigation activities, and prioritize activities and efforts to achieve the protection of people, structures, the environment, and significant infrastructure in Elmore County while facilitating new opportunities for pre-disaster mitigation funding and cooperation.

### **1.1.2.1 National Fire Plan**

The goals of this Wildland-Urban Interface Fire Mitigation Plan include:

1. Improve Fire Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restore Fire-Adapted Ecosystems
4. Promote Community Assistance

Its three guiding principles are:

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

This Wildland-Urban Interface Fire Mitigation Plan fulfills the National Fire Plan's 10-Year Comprehensive Strategy and the Idaho Statewide Implementation Strategy for the National Fire Plan. The projects and activities recommended under this plan are in addition to other Federal, state, and private / corporate forest and rangeland management activities. The implementation plan does not alter, diminish, or expand the existing jurisdiction, statutory and regulatory responsibilities and authorities or budget processes of participating Federal, State, and tribal agencies.

By endorsing this implementation plan, all signed parties agree that reducing the threat of wildland fire to people, communities, and ecosystems will require:

- Firefighter and public safety continuing as the highest priority.
- A sustained, long-term and cost-effective investment of resources by all public and private parties, recognizing overall budget parameters affecting Federal, State, Tribal, and local governments.
- A unified effort to implement the collaborative framework called for in the Strategy in a manner that ensures timely decisions at each level.

- Accountability for measuring and monitoring performance and outcomes, and a commitment to factoring findings into future decision making activities.
- The achievement of national goals through action at the local level with particular attention on the unique needs of cross-boundary efforts and the importance of funding on-the-ground activities.
- Communities and individuals in the wildland-urban interface to initiate personal stewardship and volunteer actions that will reduce wildland fire risks.
- Management activities, both in the wildland-urban interface and in at-risk areas across the broader landscape.
- Active forestland and rangeland management, including thinning that produces commercial or pre-commercial products, biomass removal and utilization, prescribed fire and other fuels reduction tools to simultaneously meet long-term ecological, economic, and community objectives.

The National Fire Plan identifies a three-tiered organization structure including 1) the local level, 2) state/regional and tribal level, and 3) the national level. This plan adheres to the collaboration and outcomes consistent with a local level plan. Local level collaboration involves participants with direct responsibility for management decisions affecting public and/or private land and resources, fire protection responsibilities, or good working knowledge and interest in local resources. Participants in this planning process include Tribal representatives, local representatives from Federal and State agencies, local governments, landowners and other stakeholders, and community-based groups with a demonstrated commitment to achieving the strategy's four goals. Existing resource advisory committees, watershed councils, or other collaborative entities may serve to achieve coordination at this level. Local involvement, expected to be broadly representative, is a primary source of planning, project prioritization, and resource allocation and coordination at the local level. The role of the private citizen is not to be underestimated, as their input and contribution to all phases of risk assessments, mitigation activities, and project implementation is greatly facilitated by their involvement.

### **1.1.2.2 Idaho Statewide Implementation Strategy**

The Strategy adopted by the State of Idaho is to provide a framework for an organized and coordinated approach to the implementation of the National Fire Plan, specifically the national "10-Year Comprehensive Strategy Implementation Plan".

Emphasis is on a collaborative approach at the following levels:

- County
- State

Within the State of Idaho, the Counties, with the assistance of State and Federal agencies and local expert advice, will develop a risk assessment and mitigation plan to identify local vulnerabilities to wildland fire. A Statewide group will provide oversight and prioritization as needed on a statewide scale.

This strategy is not intended to circumvent any work done to date and individual Counties should not delay implementing any National Fire Plan projects to develop this county plan. Rather, Counties are encouraged to identify priority needs quickly and begin whatever actions necessary to mitigate those vulnerabilities.

It is recognized that implementation activities such as; hazardous fuel treatment, equipment purchases, training, home owner education, community wildland fire mitigation planning, and other activities, will be occurring concurrently with this County wide planning effort.

#### **1.1.2.2.1 County Wildland Fire Interagency Group**

Each County within the state has been requested to write a Wildland Fire Mitigation Plan. These plans should contain at least the following five elements:

- 1) Documentation of the process used to develop the mitigation plan. How the plan was developed, who was involved and how the public was involved.
- 2) A risk assessment to identify vulnerabilities to wildfire in the wildland-urban interface (WUI).
- 3) A prioritized mitigation strategy that addresses each of the risks. Examples of these strategies could be: training for fire departments, public education, hazardous fuel treatments, equipment, communications, additional planning, new facilities, infrastructure improvements, code and/or ordinance revision, volunteer efforts, evacuation plans, etc.
- 4) A process for maintenance of the plan which will include monitoring and evaluation of mitigation activities
- 5) Documentation that the plan has been formally adopted by the involved agencies. Basically a signature page of all involved officials.

This five-element plan is an abbreviated version of the FEMA mitigation plan and will begin to meet the requirements for that plan. To develop these plans each county should bring together the following individuals, as appropriate for each county, to make up the County Wildland Fire Interagency Group. It is important that this group has representation from agencies with wildland fire suppression responsibilities:

- County Commissioners (Lead)
- Local Fire Chiefs
- Idaho Department of Lands representative
- USDA Forest Service representative
- USDI Bureau of Land Management representative
- US Fish and Wildlife representative
- Bureau of Indian Affairs
- Local Tribal leaders
- Bureau of Disaster Services
- LEPC Chairperson
- Resource Conservation and Development representative
- State Fish and Game representative
- Interested citizens and community leaders as appropriate
- Other officials as appropriate

Role of Resource Conservation and Development Councils (RC&D). If requested by the County Commissioners, the local RC&D's may be available to assist the County Commissioners in evaluating each County within their council area to determine if there is a wildland fire mitigation plan in place, or if a plan is currently in the development phase. If no plan is in place, the RC&D's, if requested, could be available to assist the Commissioners with the formation of the County Wildland Fire Interagency Group and/or to facilitate the development of wildland fire mitigation plan.

If a plan has been previously completed, the Commissioners will determine if the recommended five elements have been addressed. The Counties will provide a copy of the completed mitigation plan to the Idaho Department of Lands National Fire Plan Coordinator, which will include a contact list of individuals that developed the plan.

### **1.1.2.3 National Association of State Foresters**

#### **1.1.2.3.1 Identifying and Prioritizing Communities at Risk**

This plan is written with the intent to provide the information necessary for decision makers (elected officials) to make informed decisions in order to prioritize projects across the entire county. These decisions may be made from within the council of Commissioners, or through the recommendations of ad hoc groups tasked with making prioritized lists of projects. It is not necessary to rank projects numerically, although that is one approach, rather it may be possible to rank them categorically (high priority set, medium priority set, and so forth) and still accomplish the goals and objectives set forth in this planning document.

The following was prepared by the National Association of State Foresters (NASF), June 27, 2003, and is included here as a reference for the identification of prioritizing treatments between communities.

**Purpose:** To provide national, uniform guidance for implementing the provisions of the "Collaborative Fuels Treatment" MOU, and to satisfy the requirements of Task e, Goal 4 of the Implementation Plan for the 10-Year Comprehensive Strategy.

**Intent:** The intent is to establish broad, nationally compatible standards for identifying and prioritizing communities at risk, while allowing for maximum flexibility at the state and regional level. Three basic premises are:

- Include all lands and all ownerships.
- Use a collaborative process that is consistent with the complexity of land ownership patterns, resource management issues, and the number of interested stakeholders.
- Set priorities by evaluating projects, not by ranking communities.

The National Association of State Foresters (NASF) set forth the following guidelines in the Final Draft Concept Paper; Communities at Risk, December 2, 2002.

**Task:** Develop a definition for "communities at risk" and a process for prioritizing them, per the Implementation Plan for the 10-Year Comprehensive Strategy (Goal 4.e.). In addition, this definition will form the foundation for the NASF commitment to annually identify priority fuels reduction and ecosystem restoration projects in the proposed MOU with the federal agencies (section C.2 (b)).

### 1.1.2.3.2 Conceptual Approach

1. NAFS fully supports the definition of the Wildland Urban Interface (WUI) previously published in the Federal Register. Further, proximity to federal lands should not be a consideration. The WUI is a set of conditions that exists on, or near, areas of wildland fuels nation-wide, regardless of land ownership.
2. Communities at risk (or, alternately, landscapes of similar risk) should be identified on a state-by-state basis with the involvement of all agencies with wildland fire protection responsibilities: state, local, tribal, and federal.
3. It is neither reasonable nor feasible to attempt to prioritize communities on a rank order basis. Rather, communities (or landscapes) should be sorted into three, broad categories or zones of risk: high, medium, and low. Each state, in collaboration with its local partners, will develop the specific criteria it will use to sort communities or landscapes into the three categories. NAFS recommends using the publication “Wildland/Urban Interface Fire Hazard Assessment Methodology” developed by the National Wildland/Urban Interface Fire Protection Program (circa 1998) as a reference guide. (This program, which has since evolved into the Firewise Program, is under the oversight of the National Wildfire Coordinating Group (NWCG)). At minimum, states should consider the following factors when assessing the relative degree of exposure each community (landscape) faces.
  - **Risk:** Using historic fire occurrence records and other factors, assess the anticipated probability of a wildfire ignition.
  - **Hazard:** Assess the fuel conditions surrounding the community using a methodology such as fire condition class, or [other] process.
  - **Values Protected:** Evaluate the human values associated with the community or landscape, such as homes, businesses, and community infrastructure (e.g. water systems, utilities, transportation systems, critical care facilities, schools, manufacturing and industrial sites, and high value commercial timber lands).
  - **Protection Capabilities:** Assess the wildland fire protection capabilities of the agencies and local fire departments with jurisdiction.
4. Prioritize by project not by community. Annually prioritize projects within each state using the collaborative process defined in the national, interagency MOU “For the Development of a Collaborative Fuels Treatment Program”. Assign the highest priorities to projects that will provide the greatest benefits either on the landscape or to communities. Attempt to properly sequence treatments on the landscape by working first around and within communities, and then moving further out into the surrounding landscape. This will require:
  - First, focus on the zone of highest overall risk but consider projects in all zones. Identify a set of projects that will effectively reduce the level of risk to communities within the zone.
  - Second, determining the community’s willingness and readiness to actively participate in an identified project.
  - Third, determining the willingness and ability of the owner of the surrounding land to undertake, and maintain, a complementary project.

- Last, set priorities by looking for projects that best meet the three criteria above. It is important to note that projects with the greatest potential to reduce risk to communities and the landscape may not be those in the highest risk zone, particularly if either the community or the surrounding landowner is not willing or able to actively participate.
5. It is important, and necessary, that we be able to demonstrate a level of accomplishment that justifies to Congress the value of continuing the current level of appropriations for the National Fire Plan. Although appealing to appropriators and others, it is not likely that many communities (if any) will ever be removed from the list of communities at risk. Even after treatment, all communities will remain at some, albeit reduced, level of risk. However, by using a science-based system for measuring relative risk, we can likely show that, after treatment (or a series of treatments), communities are at “*reduced risk*”.

Similarly, scattered, individual homes that complete projects to create defensible space could be “counted” as “households at reduced risk”. This would be a way to report progress in reducing risk to scattered homes in areas of low priority for large-scale fuels treatment projects.

Using the concept described above, the NASF believes it is possible to accurately assess the relative risk that communities face from wildland fire. Recognizing that the condition of the vegetation (fuel) on the landscape is dynamic, assessments and re-assessments must be done on a state-by-state basis, using a process that allows for the integration of local knowledge, conditions, and circumstances, with science-based national guidelines. We must remember that it is not only important to lower the risk to communities, but once the risk has been reduced, to maintain those communities at a reduced risk.

Further, it is essential that both the assessment process and the prioritization of projects be done collaboratively, with all local agencies with fire protection jurisdiction – federal, state, local, and tribal – taking an active role.

#### **1.1.2.4 Healthy Forests Restoration Act**

On December 3, 2003, President Bush signed into law the Healthy Forests Restoration Act of 2003 to reduce the threat of destructive wildfires while upholding environmental standards and encouraging early public input during review and planning processes. The legislation is based on sound science and helps further the President's Healthy Forests Initiative pledge to care for America's forests and rangelands, reduce the risk of catastrophic fire to communities, help save the lives of firefighters and citizens, and protect threatened and endangered species.

Among other things the Healthy Forests Restoration Act (HFRA):

- Strengthens public participation in developing high priority projects;
- Reduces the complexity of environmental analysis allowing federal land agencies to use the best science available to actively manage land under their protection;
- Creates a pre-decisional objections process encouraging early public participation in project planning; and
- Issues clear guidance for court action challenging HFRA projects.

The Elmore County Wildland-Urban Interface Wildfire Mitigation Plan is developed to adhere to the principles of the HFRA while providing recommendations consistent with the policy document which should assist the federal land management agencies (US Forest Service and Bureau of Land Management) with implementing wildfire mitigation projects in Elmore County



that incorporate public involvement and the input from a wide spectrum of fire and emergency services providers in the region.

### **1.1.3 Elmore County Comprehensive Growth and Development Plan**

The Elmore County Comprehensive Growth and Development Plan (2004) is a guide that establishes goals and objectives to help the County grow and develop. The Elmore County Comprehensive Plan includes a forecast of conditions that are anticipated to occur within the next ten-year period, 2004 to 2015. The Plan addresses and includes all 14 comprehensive planning components of the "Idaho Local Planning Act of 1975" as supplemented and amended.

Planning is an ongoing process. Conditions and priorities change; consequently the plan will be reviewed regularly and revised when necessary. The 14 planning components included in the Elmore County Comprehensive Growth and Development Plan include:

1. Private Property Rights
2. Population
3. School Facilities and Transportation
4. Economic Development
5. Land Use
6. Natural Resources
7. Hazardous Areas
8. Public Services, Facilities, and Utilities
9. Transportation
10. Recreation
11. Special Areas or Sites
12. Housing
13. Community Design
14. Implementation

Within each chapter of the comprehensive plan are goals and objectives, which help establish development guidelines and public policy. Goals are defined as statements, which indicate a general aim or purpose to be achieved. Goals reflect countywide values. Objectives are defined as guidelines, which establish a definite course to guide present and future decisions. The Elmore County Comprehensive Plan is directed toward all land within the County including Federal, State, Public and Private lands.

This Wildland-Urban Interface Wildfire Mitigation Plan will "dove-tail" with the County's Comprehensive Plan during its development and implementation to insure that the goals and objectives of each are integrated together. In many sections of this document, direct reference will be made to specific recommendations that are amplified or enhanced in this document. This planning effort fully adopts the goals and objectives of the County's Comprehensive Plan.

## **1.1.4 Elmore County Wildfire Mitigation Planning Philosophy**

The goals of this planning process include the integration of the National Fire Plan, the Idaho Statewide Implementation Strategy, and the requirements of FEMA for a county-wide Fire Mitigation Plan; a component of the County's Natural Hazards Mitigation Plan. This effort will utilize the best and most appropriate science from all partners, the integration of local and regional knowledge about wildfire risks and fire behavior, while meeting the needs of local citizens, the regional economy, the significance of this region to the rest of Idaho and the Inland West.

### **1.1.4.1 Mission Statement**

To make Elmore County residents, communities, state agencies, local governments, and businesses less vulnerable to the negative effects of wildland fires through the effective administration of wildfire hazard mitigation grant programs, hazard risk assessments, wise and efficient fuels treatments, and a coordinated approach to mitigation policy through federal, state, regional, and local planning efforts. Our combined prioritization will be the protection of people, structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy.

### **1.1.4.2 Vision Statement**

Institutionalize and promote a countywide wildfire hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Elmore County.

### **1.1.4.3 Goals**

- To reduce the area of WUI land burned and losses experienced because of wildfires where these fires threaten communities in the wildland-urban interface
- Prioritize the protection of people, structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy
- Educate communities about the unique challenges of wildfire in the wildland-urban interface (WUI)
- Establish mitigation priorities and develop mitigation strategies in the WUI
- Strategically locate and plan fuel reduction projects
- Provide recommendations for alternative treatment methods, such as modifying forest stand density, herbicide treatments, fuel reduction techniques, and disposal or removal of treated slash
- Meet or exceed the requirements of the National Fire Plan and FEMA for a County level Fire Mitigation Plan

## Chapter 2: Planning Process

### 2 Documenting the Planning Process

Documentation of the planning process, including public involvement, is required to meet FEMA's DMA 2000 (44CFR§201.4(c)(1) and §201.6(c)(1)). This section includes a description of the planning process used to develop this plan, including how it was prepared, who was involved in the process, and how all of the involved agencies participated.

#### 2.1.1 Description of the Planning Process

The Elmore County Wildland-Urban Interface Wildfire Mitigation Plan was developed through a collaborative process involving all of the organizations and agencies detailed in Section 1.0 of this document. The County's local coordinator contacted these organizations directly to invite their participation and schedule meetings of the planning committee. The planning process included 5 distinct phases which were in some cases sequential (step 1 then step 2) and in some cases intermixed (step 4 completed though out the process):

1. **Collection of Data** about the extent and periodicity of wildfires in and around Elmore County. This included an area encompassing Boise, Ada, Canyon, Owyhee, Twin Falls, Blaine, and Custer Counties to insure a robust dataset for making inferences about fires in Elmore County specifically; this included a wildfire extent and ignition profile.
2. **Field Observations and Estimations** about wildfire risks including fuels assessments, juxtaposition of structures and infrastructure to wildland fuels, access, and potential treatments by trained wildfire specialists.
3. **Mapping** of data relevant to wildfire control and treatments, structures, resource values, infrastructure, fire prone landscapes, and related data.
4. **Facilitation of Public Involvement** from the formation of the planning committee, to a public mail survey, news releases, public meetings, public review of draft documents, and acceptance of the final plan by the signatory representatives.
5. **Analysis and Drafting of the Report** to integrate the results of the planning process, providing ample review and integration of committee and public input, followed by acceptance of the final document.

Planning efforts were led by the Project Director, Dr. William E. Schlosser, of Northwest Management, Inc. Dr. Schlosser holds 4 degrees in natural resource management (A.S. geology; B.S. forest and range management; M.S. natural resource economic & finance; Ph.D. environmental science and regional planning). Mr. Wayne Forrey, AICP, is a planner with many years of local planning experience in Elmore County. Together, they led a team of resource professionals that included fire mitigation specialists, wildfire control specialists, resource management professionals, and hazard mitigation experts.

They were the point-people for team members to share data and information with during the plan's development. They and the planning team met with many residents of the county during the inspections of communities, infrastructure, and hazard abatement assessments. This methodology, when coupled with the other approaches in this process, worked adequately to integrate a wide spectrum of observations and interpretations about the project.

The planning philosophy employed in this project included the open and free sharing of information with interested parties. Information from federal and state agencies was integrated

into the database of knowledge used in this project. Meetings with the committee were held through out the planning process to facilitate a sharing of information between cooperators.

When the public meetings were held, many of the committee members were in attendance and shared their support and experiences with the planning process and their interpretations of the results.

## **2.2 Public Involvement**

Public involvement in this plan was made a priority from the inception of the project. There were a number of ways that public involvement was sought and facilitated. In some cases this led to members of the public providing information and seeking an active role in protecting their own homes and businesses, while in other cases it led to the public becoming more aware of the process without becoming directly involved in the planning process.

### **2.2.1 News Releases**

Under the auspices of the Elmore County Wildland-Urban Interface Wildfire Mitigation Planning Committee, news releases were submitted to area news papers and radio (there are no local television companies servicing this county).

#### **2.2.1.1 Radio Messages**

Public Service Announcements (PSAs) were broadcast on two major Boise area radio stations that provide service to Elmore County areas. These PSAs described the Elmore County fire planning process and invited the public to contact the Elmore County Commissioners for more information.

#### **2.2.1.2 Newspaper Articles**

Committee and public meeting announcements were published in the local newspapers ahead of each meeting. The following is an example of one of the newspaper announcements that ran in the local newspaper.

#### **PUBLIC MEETINGS FOR ELMORE COUNTY WILDFIRE MITIGATION PLANNING**

The ELMORE COUNTY WILDFIRE MITIATION PLANNING TEAM will be conducting public meetings to provide information and accept comments on the plan. All residents of Elmore County are encouraged to attend to review the information and provide feedback.

The team has been working since April of this year on the plan. It covers all lands within Elmore County regardless of ownership or boundaries. It provides a hazard analysis, that based on many years of data shows where historically fires have occurred in addition to areas of high fire spread risk. It also identifies communities and concentrations of development or sub-divisions as well as those individual properties and dwelling scattered throughout the county. The plan identifies those areas that are most at risk from fire and will recommend mitigation efforts to reduce the problem.

The planning group has also met with city and rural fire departments within the county to identify boundaries and or jurisdictions (or lack of) as well as equipment or training needs.

There will be four public meetings, the first one will be held at the Stage Stop on the

west side of the County on Interstate 84 (September 15), the second at the American Legion Hall, Mountain Home (September 16), the third at the Pine Senior Citizens Center in Pine (September 17), and the fourth in Glenns Ferry at the Glenns Ferry Senior Citizens Center (September 18). Each meeting will begin at 6:30 p.m. and will conclude at 9:00 p.m.

Public involvement and citizen participation is critical to this process. Please attend one of the four meetings to become familiar with and provide input to the plan.

If there are any questions, please direct them to Wayne Forrey, Elmore County Fire Coordinator at 208-362-9345.

## **2.2.2 Public Mail Survey**

In order to collect a broad base of perceptions about wildland fire and individual risk factors of homeowners in Elmore County, a mail survey was conducted. Using the cadastral database of landowners in Elmore County, homeowners from the Wildland-Urban Interface surrounding each community were identified. They were included in a database of names that integrated individuals living on parcels with a home, at least 3 acres of land, and a mailing address within Elmore County. This database created a list of 312 unique names to which was affixed a random number that contributed to the probability of being selected for the public mail survey. A total of 207 landowners meeting the above criteria were selected.

The public mail survey developed for this project has been used in the past by Northwest Management, Inc., during the execution of other WUI Wildfire Mitigation Plans. The survey used The Total Design Method (Dillman 1978) as a model to schedule the timing and content of letters sent to the selected recipients. Copies of each cover letter, mail survey, and communication are included in Appendix III.

The first in the series of mailing was sent August 8, 2003, and included a cover letter, a survey, and an offer of receiving a custom GIS map of the area of their selection in Elmore County if they would complete and return the survey. The free map incentive was tied into assisting their community and helping their interests by participating in this process. Each letter also informed residents about the planning process. A return self-addressed envelope was included in each packet. A postcard reminder was sent to the non-respondents on August 20, 2003, encouraging their response. A final mailing, with a revised cover letter pleading with them to participate, was sent to non-respondents on September 1, 2003.

Surveys were returned during the months of August, September, October, and early November. A total of 107 residents responded to the survey. Four surveys were returned as undeliverable, and four responded that they no longer live in the area. The effective response rate for this survey was 54%. Statistically, this response rate allows the interpretation of all of the response variables significantly at the 99% confidence level.

### **2.2.2.1 Survey Results**

A summary of the survey's results will be presented here and then referred back to during the ensuing discussions on the need for various treatments, education, and other information.

All of the respondents have a home in Elmore County, and 83% consider this their primary residence. About 24% of the respondents were from the Mountain Home area, 21% were from the Hammett area, 22% from the Glenns Ferry, 10% from Featherville, 7% from Pine, 5% from Atlanta, 3% from King Hill, 5% from Prairie, and 1% from Oasis.

Virtually all of the respondents (99%) correctly identified that they have emergency telephone 911 services in their area.

Respondents were asked to identify if their home is protected by a fire district. Many of the county’s residents have rural or city fire protection, with the exception of the homes in the areas of Tipanuk, Pine, Featherville, Dixie, Prairie, and Rocky Bar. Of the respondents, 68% indicated they were covered by a rural fire district, 32% believed they were not protected. Approximately 60% indicated they were in a protection district and were correct. Approximately 15% indicated they were not protected by either a rural or city district and were correct. These two groups account for 75% of the total respondents which correctly identified if they were protected by fire department. Approximately 17% of the respondents indicated they were not protected by a fire department when records indicated they are, with the remaining 8% of respondents indicating they have fire district protection, when records indicate they do not. It is important to note, that many of the households responding incorrectly to fire protection, specifically those who believe they are protected but are not, were from the Pine, Featherville, and Prairie communities.

Respondents were asked to indicate the type of roofing material covering the main structure of their home. Less than half of the respondents, 42% indicated their homes were covered with a composite material. About 39% indicated their home were covered with an aluminum roofing material. Roughly 16% of the respondents indicated they have a wooden roofing material such as shakes. The additional 2% of respondents had a variety of combustible and non-combustible materials indicated.

Residents were asked to evaluate the proximity of trees within certain distances of their homes. Often, the density of trees around a home is an indicator of increased fire risk. The results are presented in Table 2.1

**Table 2.1 Survey responses indicating the proximity of trees to homes.**

<b>Number of Trees</b>	<b>Within 250 feet of your home</b>	<b>Within 75 feet of your home</b>
None	5%	10%
Less than 10	25%	41%
Between 10 and 25	38%	36%
More than 25	32%	16%

Approximately 78% of those returning the survey indicated they have a lawn surrounding their home. Of these individual home sites, 98% indicated they keep this lawn green through the fire season.

The average driveway length of the respondents was approximately 1,000 feet long, from their main road to their parking area. Roughly 8% of the respondents had a driveway over ½ mile long, and a corresponding 14% had a driveway over ¼ of a mile long. Of these homes, roughly 60% have turnouts allowing two vehicles to pass each other in the case of emergency. Approximately 78% of all homeowners indicated they have an alternative escape route, with the remaining 22% indicating only one-way-in and one-way-out.

Nearly all respondents (94%) indicated they have some type of tools to use against a wildfire that threatens their home. Table 2.2 summarizes these responses.

**Table 2.2. Percent of homes with indicated fire fighting tools in Elmore County.**

- 94% – Hand tools (shovel, Pulaski, etc.)
- 34% – Portable water tank
- 17% – Stationery water tank

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**Table 2.2. Percent of homes with indicated fire fighting tools in Elmore County.**

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46% – Pond, lake, or stream water supply close

32% – Water pump and fire hose

44% – Equipment suitable for creating fire breaks (bulldozer, cat, skidder, etc.)

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Roughly 37% of the respondents in Elmore County indicated they have someone in their household trained in wildland fire fighting. Approximately 19% indicated someone in the household had been trained in structural fire fighting. However, it is important to note that these questions did not specify a standard nor did it refer to how long ago the training was received.

A couple of questions in the survey related to on-going fire mitigation efforts households may be implementing. Respondents were asked if they conduct a periodic fuels reduction program near their home sites, such as grass or brush burning. Approximately 72% answered affirmative to this question, while 60% responded that livestock (cattle, horses, sheep) graze the grasses and forbs around their home sites.

Respondents were asked to complete a fuel hazard rating worksheet to assess their home's fire risk rating. An additional column titled "results" has been added to the table, showing the percent of respondents circling each rating (Table 2.3).

Circle the ratings in each category that best describes your home.

Table 2.3. Fuel Hazard Rating Worksheet		Rating	Results
<b>Fuel Hazard</b>	Small, light fuels (grasses, forbs, weeds, shrubs)	1	65%
	Medium size fuels (brush, large shrubs, small trees)	2	25%
	Heavy, large fuels (woodlands, timber, heavy brush)	3	10%
<b>Slope Hazard</b>	Mild slopes (0-5%)	1	66%
	Moderate slope (6-20%)	2	23%
	Steep Slopes (21-40%)	3	8%
	Extreme slopes (41% and greater)	4	3%
<b>Structure Hazard</b>	Noncombustible roof and noncombustible siding materials	1	29%
	Noncombustible roof and combustible siding material	3	45%
	Combustible roof and noncombustible siding material	7	11%
	Combustible roof and combustible siding materials	10	16%
<b>Additional Factors</b>	Rough topography that contains several steep canyons or ridges	+2	Average -1.2 pts
	Areas having history of higher than average fire occurrence	+3	
	Areas exposed to severe fire weather and strong winds	+4	
	Areas with existing fuel modifications or usable fire breaks	-3	
	Areas with local facilities (water systems, rural fire districts, dozers)	-3	

### Calculating your risk

Values below are the average response value to each question.

$$\begin{array}{rcl}
 \text{Fuel hazard} & \underline{1.4} & \times \text{Slope Hazard } \underline{1.5} = \underline{2.2} \\
 \text{Structural hazard} & + & \underline{3.9} \\
 \text{Additional factors (+ or -)} & & \underline{-1.2} \\
 \text{Total Hazard Points} & = & \underline{4.9}
 \end{array}$$

**Table 2.4. Percent of respondents in each risk category as determined by the survey respondents.**

00% – Extreme Risk = 26 + points
02% – High Risk = 16–25 points
36% – Moderate Risk = 6–15 points
62% – Low Risk = 6 or less points

Maximum household rating form score was 16 points, as assessed by the homeowners.

Finally, respondents were asked “if offered in your area, would members of your household attend a free, or low cost, one-day training seminar designed to teach homeowners in the



wildland–urban interface how to improve the defensible space surrounding your home and adjacent outbuildings?” A majority of the respondents, 62% indicated a desire to participate in this type of training.

Homeowners were also asked, “Would you be interested in participating in a cost share program that would pay a portion of the costs of implementing fire risk projects on your property?” To this question, only 31% indicated a willingness to do so. It has been pointed out that some landowners may have interpreted this question and responded with the intention of indicating they would be willing to pay 100% of the costs themselves, or none of the costs themselves, relying on a 100% federal, state, or grant payment to make the treatments happen. Because this vastly differing interpretation of the same question, further elucidation of this response should not be made.

### 2.2.3 Committee Meetings

The following list of people who participated in the planning committee meetings, volunteered time, or responded to elements of the Elmore County Wildland-Urban Interface Wildfire Mitigation Plan’s preparation.

First Name	Last Name	Representing	City	State	Postal Code
Nick	Shilz	Elmore County Disaster Services	Mountain Home	Idaho	83647
Kole	Berriochoa	USFS - Mountain Home Ranger District	Mountain Home	Idaho	83647
Evans	Kuo	USFS	Boise	Idaho	83705
Calvin	Ireland	Elmore County Commissioner	Mountain Home	Idaho	83647
Larry	Rose	Elmore County Commissioner	Glenns Ferry	Idaho	83623
Mary	Equisquiza-Stanek	Elmore County Commissioner	Mountain Home	Idaho	83647
Dan	Hennis	Oasis FD	Oasis	Idaho	83647
Mark	Moore	Mountain Home Fire Department	Mountain Home	Idaho	83647
Rick	VanMeer	Mountain Home Fire Department	Mountain Home	Idaho	83647
Bud	Corbus	Mountain Home Fire Department	Mountain Home	Idaho	83647
Phil	Gridley	Mountain Home Fire Department	Mountain Home	Idaho	83647
Cathy & Charlie	Starbuck	Grand View Fire Department	Grandview	Idaho	83624
Ed	Walter	El-Wyhee Hi-Lites Newspaper	Mountain Home	Idaho	83647
Ken	Homik	Northwest Management	Moscow	Idaho	83843
Jolene	Hobdey	Oasis Fire Department	Oasis	Idaho	83647
Joe	Twitchell	RC&D Council President	Mountain Home	Idaho	83647
Candy	Rossman	SCA Fire Education Cord.	Owyhee	Nevada	89832
Kristin	Sprinke	SCA Fire Education Cord.	Owyhee	Nevada	89832
Devin	Healy	SCA Fire Education Cord.	Owyhee	Nevada	89832
Bill	Moore	NRCS RC&D Coordinator	Meridian	Idaho	83642
Jonathan	Perry	State of Idaho, BDS Manager	Boise	Idaho	83702
Pat	Lucas	State of Idaho, BDS Manager	Boise	Idaho	83702
Wayne	Forrey	Pathway Planners Consulting	Boise	Idaho	83709
William	Schlosser	Northwest Management, Inc.	Moscow	Idaho	83843

Committee Meetings were scheduled and held on the following dates:

- April 22, 2003
- May 20, 2003
- June 24, 2003
- July 29, 2003 and
- August 26, 2003

The following provides a summary of the committee meetings through reproductions of the agenda and copies of the meeting minutes.

### **July 24-28, 2003**

An article was placed in the two local newspapers explaining the up coming plan. It identified the rationale, objectives, process and invited the public to participate in future meetings. Specific names and contact information were provided for the public to contact for more information.

### **July 29, 2003**

- Meetings with Wildland and Rural Fire District personnel continued through the last month to verify and augment the information provided in the County Survey. This information will be used in the preparation of the Resources and Capabilities Guide and to identify possible gaps in either resources or training for fire preparedness.
- Mapping of the county at 10m resolution in GIS database complete.
- Large Fire History information provided by USFS and BLM for use in developing a Fire Prone Landscape estimation. This process continues through July.
- Community assessments has progressed during July with all medium and large size communities visited, assessed, and preliminary recommendations developed. Many of the smaller communities were visited as well.
  - On July 22, Dr. Schlosser and Mr. Scott visited Atlanta ahead of the Hot Creek Fire. The assessment of the community was completed. The two were able to take some amazing pictures of the advancing fire before access was cut off on that day. This event underscores the importance of the Fire Mitigation Plan in Elmore County as a means to increase the potential that these communities will be preserved during a large fire event.
- The community survey was drafted by NMI and edited by Wayne Forrey. Those wishing to receive an advance copy should provide e-mail address at this meeting (to Ken Homik). The letters will be e-mailed to those wishing to provide comment or just be kept up to speed on what is in it. The mailing list information was provided late in July and will be used to create the mailing list for launch in early August.
- We need to set firm dates in August or September for the community meetings to present this data and provide an avenue for community input to the planning process. We suggest the second half of August or the First half of September for these evening public meetings.

### **August 26, 2003**

The progress on the fire mitigation plan continues through August, 2003. Specific activities since July include:

- GIS data has been collected and summarized for Elmore County,
- Fire Prone Landscapes have been estimated and have gone through field review internally. Sample maps are available to review at this meeting. Copies for Elmore County Commissioners, USFS, BLM, and one map to remain at Mtn. Home Rural Fire Department for others to review.
- Field visits by NMI fire personnel have been conducted with community evaluations completed in and around the county. Atlanta was evaluated during the early days of the Hot Creek Fire (see photos) and has since received some treatments in advance of a potential fire event in the community. Atlanta needs re-evaluation...
- Resources and Capabilities Data has been collected from Rural and Wildland Fire Fighting agencies. Some data still needs to be obtained, the fire season is hampering the collection of data, but it will be forth coming,
- Public survey was sent to 206 residents of Elmore County on August 7. Post Card reminder was sent on August 20. The final mailing will go out on about August 28.
- Fire Mitigation Projects are being developed for specific areas, and for general county wide recommendations. These will be made available to committee members for review prior to the community meetings.

Items to be completed in the near-term:

- Committee members with information that should be included in the County's Fire Mitigation Plan should convey this information to William E. Schlosser as soon as possible to make sure we incorporate as much detail at this point as possible. Ideas include where risk is located, on-going mitigation projects in the county, limiting factors that would logically be incorporated into the plan (policy, planning and zoning), and other opportunities we can incorporate.
- Need to schedule public meetings for early or mid September (ASAP). Public attendance is highest when the "smoke is still in the air". Wayne Forrey to lead scheduling, advertising, and setting up the meetings. If a date has been set before the last mailings are sent out, we will include a flyer on the meeting.

## **2.2.4 Public Meetings**

Public meetings were held during the planning process, as an integral component to the planning process. It was the desire of the planning committee, and the Elmore County Commissioners to integrate the public's input to the development of the fire mitigation plan.

Formal public meetings were scheduled on September 15, 2003, near Oasis, Idaho, on September 16, 2003, at Mountain Home, Idaho, on September 17, 2003, at Pine, Idaho, and on September 18, at Glens Ferry, Idaho. The purpose of these meetings was to share information on the planning process with a broadly representative cross section of Elmore County landowners. Both meetings had wall maps posted in the meeting rooms with many of the analysis results summarized specifically for the risk assessments, location of structures, fire protection, and related information. The formal portion of the presentations included a PowerPoint presentation made by Project Director, Dr. William E. Schlosser. During his presentations, comments from committee members, fire chiefs, and others were encouraged in an effort to engage the audience in a discussion.

It was made clear to all in attendance that their input was welcome and encouraged, as specific treatments had not yet been decided, nor had the risk assessment been completed. Attendees

were told that they could provide oral comment during these meetings (which was recorded by the County Fire Plan Facilitator Wayne Forrey and are summarized below), they could provide written comment to the meetings, or they could request more information in person to discuss the plan. In addition, attendees were told they would have an opportunity to review the draft plan prior to its completion to further facilitate their comments and input.

The formal presentations lasted approximately 1½ hours and included many questions and comments from the audience. Following the meetings, many discussions continued with the committee members and the general public discussing specific areas, potential treatments, the risk analysis, and other topics.

Attendance at the public meetings included 8 individuals at the Stage Stop meeting, 4 in Mountain Home, 15 in Pine, and 8 at Glenns Ferry. The following are comments, questions or suggestions from the meetings:

#### **2.2.4.1 Stage Stop Public Meeting**

##### **September 15, 2003 - Stage Stop Meeting Room - 7:00 pm**

Introduction of the purpose of the Elmore County Wildfire Mitigation Project and introduction of Team Members by Wayne S. Forrey. Four team members in attendance and four citizens in attendance.

1. Opening remarks by Southwest Idaho RC&D Coordinator, Mr. Bill Moore.
2. Presentation by Dr. Schlosser of Northwest Management, Inc.
  - Dr. Schlosser reviewed his company's background, wildfire experience and countywide wildfire analysis experience.
  - Members of his company and the entire study team members were listed.
  - Dr. Schlosser listed the goals of the National Fire Mitigation Plan
  - Dr. Schlosser introduced the Wildland Urban Interface (WUI), pronounced woo-eee. He described the importance it plays in the wildfire mitigation plan process.
  - Dr. Schlosser reviewed the requirements of the National Fire Plan (NFP) and the Federal Emergency Management Administration (FEMA) planning process. The Elmore Plan will comply with both FEMA and NFP.
  - He described the guiding principles of the Elmore Fire Mitigation Project.
  - Dr. Schlosser reviewed the goals of tonight's meeting as follows:
    - Share information on the study process,
    - Stimulate and accept direct public input,
    - Discuss study recommendations for wildfire mitigation.
  - Dr. Schlosser then reviewed photos of actual burns and homes at risk as examples of past fires in Elmore County.
  - He discussed five areas in the National Fire Plan as they relate to the Elmore County wildfire mitigation plan.
  - Dr. Schlosser discussed in detail the FEMA requirements. Because the Elmore County Fire Plan will be FEMA compatible, additional funding may be available to implement the study's findings and recommendations.
  - Dr. Schlosser indicated that livestock grazing is an effective wildfire mitigation tool for Elmore County. He presented several examples.
  - Dr. Schlosser discussed fire prone landscapes throughout Elmore County and the factors which increase their wildfire exposure.
  - Dr. Schlosser presented excellent detailed maps of Elmore County showing fire history from World War II to present.

- Dr. Schlosser discussed fire risk assessment at three levels:
    - Individual home defensible space.
    - Community, which is a cluster of homes and defensible spaces.
    - Wildland, which are individual ranches or dwellings in rural areas.
  - Dr. Schlosser presented definitions of the Wildland Urban Interface, (WUI). He then presented maps showing the WUI for each community area within Elmore County.
3. Dr. Schlosser then presented five recommendations for public input:
    - a. Creation of a fire district for the Pine-Featherville community areas.
    - b. Reduce the size of the Glenns Ferry Fire District boundary.
    - c. Construct a metal building to house the Oasis Fire Department.
    - d. Create a fire protection district for the Prairie Community area.
    - e. Extend the Mountain Home Rural Fire District boundary as needed to fit the Wildland Urban Interface.
  4. Dr. Schlosser then summarized the results of the countywide wildfire mitigation survey. Survey statistics were discussed and preliminary conclusions drawn from the data.
  5. Dr. Schlosser then discussed the need to create signage throughout Elmore County to identify bridges and describe weight limits on bridges for heavy fire fighting equipment.
  6. Public discussion continued throughout the presentation and there was a general consensus that the five proposals presented by Dr. Schlosser were realistic and should be adopted into the Elmore County Wildfire Mitigation Plan. Citizens also agreed that bridges need to be identified throughout the County and weight limits should be posted.
  7. Citizens were then invited to review the various maps that had been posted throughout the room by the study team. Individual discussions pursued with citizens, Dr. Schlosser and members of study team on the various data presented on the maps.
  8. The meeting ended at about 9:30 PM.

#### **2.2.4.2 Mountain Home Public Meeting**

##### **September 16, 2003 - American Legion Hall, Mountain Home, Main Meeting Room - 7:00pm**

Introduction of the purpose of the Elmore County Wildfire Mitigation Project and introduction of Team Members by Wayne S. Forrey. Two team members in attendance and two citizens in attendance.

1. Opening remarks by Wayne S. Forrey.
2. Note: The two citizens present were Mountain Home Fire Chief Mr. Phil Gridley and Ms. Chris Alzola, who is a Fire Commissioner for the Mountain Home Rural Fire District. Rather than review Dr. Schlosser's entire computer presentation, Chief Gridley and Ms. Alzola decided to ask questions and review the maps brought to the meeting by Dr. Schlosser.
3. Dr. Schlosser presented five recommendations for public input:
  - a. Creation of a fire district for the Pine-Featherville community areas.
  - b. Reduce the size of the Glenns Ferry Fire District boundary.
  - c. Construct a metal building to house the Oasis Fire Department.
  - d. Create a fire protection district for the Prairie Community area.

- e. Extend the Mountain Home Rural Fire District boundary as needed to fit the Wildland Urban Interface.
4. Dr. Schlosser then summarized the preliminary results of the countywide wildfire mitigation survey. Survey statistics were discussed and preliminary conclusions drawn from the data. Chief Gridley hand delivered a bundle of recently mailed surveys to Wayne S. Forrey. These were given to Dr. Schlosser for inclusion in the total survey tabulation.
5. The four people in attendance discussed the maps and there was a general consensus that the five proposals presented by Dr. Schlosser were realistic and should be adopted into the Elmore County Wildfire Mitigation Plan.
6. The meeting ended at about 8:00 PM.

#### **2.2.4.3 Pine Public Meeting**

##### **September 17, 2003 - Pine Senior Citizens Center - 7:00 pm**

Introduction of the purpose of the Elmore County Wildfire Mitigation Project and introduction of Team Members by Wayne S. Forrey. Two team members in attendance and thirteen (13) citizens in attendance.

1. Opening remarks by Wayne S. Forrey.
2. Computer Presentation by Dr. Schlosser of Northwest Management, Inc.
  - Dr. Schlosser reviewed his company's background, wildfire experience and countywide wildfire analysis experience.
  - Members of his company and the entire study team members were listed.
  - Dr. Schlosser listed the goals of the National Fire Mitigation Plan
  - Dr. Schlosser introduced the Wildland Urban Interface (WUI), pronounced woo-eee. He described the importance it plays in the wildfire mitigation plan process.
  - Dr. Schlosser reviewed the requirements of the National Fire Plan (NFP) and the Federal Emergency Management Administration (FEMA) planning process. The Elmore Plan will comply with both FEMA and NFP.
  - He described the guiding principles of the Elmore Fire Mitigation Project.
  - Dr. Schlosser reviewed the goals of tonight's meeting as follows:
    - Share information on the study process,
    - Stimulate and accept direct public input,
    - Discuss study recommendations for wildfire mitigation.
  - Dr. Schlosser then reviewed photos of actual burns and homes at risk as examples of past fires in Elmore County.
  - He discussed five areas in the National Fire Plan as they relate to the Elmore County wildfire mitigation plan.
  - Dr. Schlosser discussed in detail the FEMA requirements. Because the Elmore County Fire Plan will be FEMA compatible, additional funding may be available to implement the study's findings and recommendations.
  - Dr. Schlosser indicated that livestock grazing is an effective wildfire mitigation tool for Elmore County. He presented several examples.
  - Dr. Schlosser discussed fire prone landscapes throughout Elmore County and the factors which increase their wildfire exposure.
  - Dr. Schlosser presented excellent detailed maps of Elmore County showing fire history from World War II to present.
  - Dr. Schlosser discussed fire risk assessment at three levels:

- Individual home defensible space.
  - Community, which is a cluster of homes and defensible spaces.
  - Wildland, which are individual ranches or dwellings in rural areas.
- Dr. Schlosser presented definitions of the Wildland Urban Interface, (WUI). He then presented maps showing the WUI for each community area within Elmore County.
3. Dr. Schlosser then presented five recommendations for public input:
    - a. Creation of a fire district for the Pine-Featherville community areas.
    - b. Reduce the size of the Glenns Ferry Fire District boundary.
    - c. Construct a metal building to house the Oasis Fire Department.
    - d. Create a fire protection district for the Prairie Community area.
    - e. Extend the Mountain Home Rural Fire District boundary as needed to fit the Wildland Urban Interface.
  4. Dr. Schlosser then summarized the preliminary results of the countywide wildfire mitigation survey. Survey statistics were discussed and preliminary conclusions drawn from the data.
  5. Dr. Schlosser then discussed the need to create signage throughout Elmore County to identify bridges and describe weight limits on bridges for heavy fire fighting equipment.
  6. Public discussion continued throughout the presentation and there was a general consensus that the five proposals presented by Dr. Schlosser were realistic and should be adopted into the Elmore County Wildfire Mitigation Plan. Citizens also agreed that bridges need to be identified throughout the County and weight limits should be posted.
  7. Pine and Featherville area citizens then asked Mountain Home Fire Chief Phil Gridley and Assistant Fire Chief Bud Corbus to describe the steps they need to take to organize support to create a fire district in their community. Chief Gridley and Assistant Chief Corbus spent considerable time discussing options and ways to create a fire protection district for Pine and Featherville communities. The general consensus was that a potential fire station could be located near the Trinity Springs Water Offices because it is about midway between Pine and Featherville. Residents also indicated they would like to invite the Oasis Fire Department staff to make a presentation to Pine and Featherville residents about how to organize a new fire district. The idea of a Pine-Featherville fire district was considered by most people in attendance to be a good idea, however, it was generally felt that its implementation would be difficult if implemented as a volunteer district because of the “retirement” nature of the community.
  8. Citizens were then invited to review the various maps that had been posted throughout the room by the study team. Individual discussions pursued with citizens, Dr. Schlosser and members of study team on the various data presented on the maps.
  9. The meeting ended at about 9:40 PM.

#### **2.2.4.4 Glenns Ferry Public Meeting**

##### **September 18, 2003 - Glenns Ferry Senior Citizens Center - 7:00 pm**

Introduction of the purpose of the Elmore County Wildfire Mitigation Project and introduction of Team Members by Wayne S. Forrey. Two team members in attendance and six (6) citizens in attendance.

1. Opening remarks by Wayne S. Forrey.
2. Computer Presentation by Dr. Schlosser of Northwest Management, Inc.
  - Dr. Schlosser reviewed his company's background, wildfire experience and countywide wildfire analysis experience.
  - Members of his company and study team members were listed.
  - Dr. Schlosser listed the goals of the National Fire Mitigation Plan

- Dr. Schlosser introduced the Wildland Urban Interface (WUI), pronounced woo-eee. He described the importance it plays in the wildfire mitigation plan process.
  - Dr. Schlosser reviewed the requirements of the National Fire Plan (NFP) and the Federal Emergency Management Administration (FEMA) planning process. The Elmore Plan will comply with both FEMA and NFP.
  - He described the guiding principles of the Elmore Fire Mitigation Project.
  - Dr. Schlosser reviewed the goals of tonight's meeting as follows:
    - Share information on the study process,
    - Stimulate and accept direct public input,
    - Discuss study recommendations for wildfire mitigation.
  - Dr. Schlosser then reviewed photos of actual burns and homes at risk as examples of past fires in Elmore County.
  - He discussed five areas in the National Fire Plan as they relate to the Elmore County wildfire mitigation plan.
  - Dr. Schlosser discussed in detail the FEMA requirements. Because the Elmore County Fire Plan will be FEMA compatible, additional funding may be available to implement the study's findings and recommendations.
  - Dr. Schlosser indicated that livestock grazing is an effective wildfire mitigation tool for Elmore County. He presented several examples.
  - Dr. Schlosser discussed fire prone landscapes throughout Elmore County and the factors which increase their wildfire exposure.
  - Dr. Schlosser presented excellent detailed maps of Elmore County showing fire history from World War II to present.
  - Dr. Schlosser discussed fire risk assessment at three levels:
    - Individual home defensible space.
    - Community, which is a cluster of homes and defensible spaces.
    - Wildland, which are individual ranches or dwellings in rural areas.
  - Dr. Schlosser presented definitions of the Wildland Urban Interface, (WUI). He then presented maps showing the WUI for each community area within Elmore County.
3. Dr. Schlosser then presented five recommendations for public input:
    - a. Creation of a fire district for the Pine-Featherville community areas.
    - b. Reduce the size of the Glens Ferry Fire District boundary.
    - c. Construct a metal building to house the Oasis Fire Department.
    - d. Create a fire protection district for the Prairie Community area.
    - e. Extend the Mountain Home Rural Fire District boundary as needed to fit the Wildland Urban Interface.
  4. Dr. Schlosser then summarized the preliminary results of the countywide wildfire mitigation survey. Survey statistics were discussed and preliminary conclusions drawn from the data.
  5. Dr. Schlosser then discussed the need to create signage throughout Elmore County to identify bridges and describe weight limits on bridges for heavy fire fighting equipment.
  6. Public discussion continued throughout the presentation and there was a general consensus that the five proposals presented by Dr. Schlosser were realistic and should be adopted into the Elmore County Wildfire Mitigation Plan. Citizens also agreed that bridges need to be identified throughout the County and weight limits should be posted.
  7. Glens Ferry area citizens then asked Dr. Schlosser about the possibility of allowing cattle ranchers access to the land along I-84 for fire prevention by grazing. Dr. Schlosser agreed to include this recommendation in the Elmore County Fire Mitigation Plan. Discussion pursued on the need to get the Cattlemen's Association involved in this opportunity. Dr. Schlosser and Glens Ferry residents spent considerable time discussing options and ways to create a 1/4-mile wide fire protection corridor along each side of I-84 by using cattle grazing as a fire management tool. The general consensus was that fences could be built



along the I-84 corridor to allow spring cattle grazing. Another point discussed was the need to locate a fire substation in Hammett and another in King Hill for forward advance fire fighting capability. Residents also indicated they would like to see the BLM do a better job of preventing wildfire spreading onto private lands.

8. Citizens were then invited to review the various maps that had been posted throughout the room by the study team. Individual discussions pursued with citizens, Dr. Schlosser and members of study team on the various data presented on the maps.
9. The meeting ended at about 9:30 PM.

#### **2.2.4.4.1 Meeting Notices**

Public notices of this meeting were printed in the Mountain Home News and Glens Ferry Gazette Newspapers the weeks of September 1 and 7, 2003.

#### **NEWS RELEASE**

#### **PUBLIC MEETING ANNOUNCEMENT**

#### **ELMORE COUNTY FIRE MITIGATION PLAN**

Four public meetings are scheduled to discuss the Elmore County Wildland Fire Plan on:

**Monday, September 15, 2003; 7:00 p.m.; Stage Stop,**

**Tuesday, September 16, 2003; 7:00 p.m.; Mountain Home American Legion Hall**

**Wednesday, September 17, 2003; 7:00 p.m.; Pine Senior Citizen Center**

**Thursday, September 18, 2003; 7:00 p.m.; Glens Ferry Senior Citizens Center**

The Elmore County Fire Mitigation Plan will include risk analysis at the community level with predictive models for where fires are likely to ignite and where they are likely to spread once ignited. A coordinating team including rural and wildland fire districts, land managers, elected officials, and others, in conjunction with Northwest Management specialists have been analyzing fire-prone landscapes and will be making recommendations for potential treatments. These public meetings are an opportunity to review information gathered thus far and solicit further information to incorporate into the Elmore County Fire Plan.

If you have any questions you can call the local coordinator, Wayne S. Forrey, at 362-9345 for further information.

#### **2.2.4.4.2 Legal Notice in Local Newsprint**

Memorandum To: Mountain Home Newspaper Staff

From: Wayne S. Forrey (362-9345)

Regarding: Legal Notices

Date: February 23, 2004

Please publish the following legal notice in the March 2, 2004 and March 16, 2004 editions of the Glens Ferry Gazette Newspaper plus the March 3, 2004 and March 17, 2004 editions of the Mountain Home Newspaper, legal notice section.

#### **Legal Notice**

Draft Elmore County Wildfire Mitigation Plan

Public Review and Comment

The Elmore County Commissioners are seeking public review, comments and input on the Draft

Wildland Fire Mitigation Plan documents that have been prepared for Elmore County. Copies of these documents can be reviewed during normal business hours at the Mountain Home Public Library, the Glens Ferry Public Library and also at the Pine/Featherville Senior Citizens Center in Pine, Idaho.

The public review and comment period for the Draft Elmore County Wildland Fire Mitigation Plan documents will be from March 3, 2004 through April 7, 2004. Please send your written comments regarding the Draft Elmore County Wildfire Mitigation Plan to the Elmore County Commissioners, County Courthouse, 150 S. 4th East Street, Mountain Home, Idaho 83647.

If you have questions, you can also contact Wayne S. Forrey, Elmore County Wildfire Coordinator at 208-362-9345.

### **2.3 Review of the WUI Wildfire Mitigation Plan**

Review of sections of this document were conducted by the planning committee during the planning process as maps, summaries, and written assessments were completed. These individuals included fire mitigation specialists, fire fighters, planners, elected officials, and others involved in the coordination process. Preliminary findings were discussed at the public meetings, where comments were collected and facilitated.

The results of these formal and informal reviews were integrated into a DRAFT Wildland-Urban Interface Wildfire Mitigation Plan. This plan was given to members of the planning committee (including the Elmore County Commissioners, and the Southwestern Idaho RC&D) on February 17, 2004. Review of the document by the individuals involved in the planning process was made from this date until March 2, 2004.

Public review of the main document and the appendices was held from March 3 through April 7, 2004. Comments were integrated into the final document. Actual comments were accepted until final publication date on May 7, 2004. The general public, agencies, rural fire districts, the Southwestern Idaho RC&D, and the Elmore County Commissioners all provided meaningful and substantive comments to the final plan and are incorporated herein.

The final version of the plan is dated May 10, 2004; both the "Main Document" and the "Appendices" show this date on the front cover.

## Chapter 3: County Characteristics & Risk Assessment

### 3 Background and Area Description

#### 3.1 Demographics

Elmore County reported a total population of 29,130 in 2000 with approximately 10,527 housing units. Elmore County has two incorporated communities, Mountain Home (pop. 11,143), and Glens Ferry (pop. 1,611). The Mountain Home Air Force Base is also located in the County with a resident population of approximately 8,900. In addition, Grand View is an incorporated city in Owyhee County, with a portion of the community located in Elmore County (pop. 470, 1990-2000 rate of growth 42.4%). Mountain Home also experienced a high rate of population growth between 1990 and 2000 growing from 7,913 to 11,143 (40.8% rate of growth). The total land area of the county is roughly 3,100 square miles (1,983,588 acres).

Table 3.1 summarizes some relevant demographic statistics for Elmore County.

**Table 3.1. Selected demographic statistics for Elmore County, Idaho, from the Census 2000.**

Subject	Number	Percent
Total population	29,130	100.0
<b>SEX AND AGE</b>		
Male	16,025	55.0
Female	13,105	45.0
Under 5 years	2,394	8.2
5 to 9 years	2,253	7.7
10 to 14 years	2,221	7.6
15 to 19 years	2,058	7.1
20 to 24 years	3,170	10.9
25 to 34 years	5,406	18.6
35 to 44 years	5,214	17.9
45 to 54 years	2,666	9.2
55 to 59 years	916	3.1
60 to 64 years	773	2.7
65 to 74 years	1,216	4.2
75 to 84 years	642	2.2
85 years and over	201	0.7
Median age (years)	29.4	(X)
18 years and over	21,039	72.2
Male	11,928	40.9
Female	9,111	31.3
21 years and over	19,649	67.5
62 years and over	2,511	8.6
65 years and over	2,059	7.1
Male	954	3.3
Female	1,105	3.8

**Table 3.1. Selected demographic statistics for Elmore County, Idaho, from the Census 2000.**

<b>Subject</b>	<b>Number</b>	<b>Percent</b>
<b>RELATIONSHIP</b>		
<b>Population</b>	<b>29,130</b>	<b>100.0</b>
In households	25,069	86.1
Householder	9,096	31.2
Spouse	5,732	19.7
Child	8,715	29.9
Own child under 18 years	7,667	26.3
Other relatives	691	2.4
Under 18 years	331	1.1
Nonrelatives	835	2.9
Unmarried partner	384	1.3
In group quarters	4,061	13.9
Institutionalized population	3,369	11.6
Noninstitutionalized population	692	2.4
<b>HOUSEHOLDS BY TYPE</b>		
<b>Households</b>	<b>9,096</b>	<b>100.0</b>
Family households (families)	6,853	75.3
With own children under 18 years	3,906	42.9
Married-couple family	5,731	63.0
With own children under 18 years	3,102	34.1
Female householder, no husband present	753	8.3
With own children under 18 years	528	5.8
Nonfamily households	2,243	24.7
Householder living alone	1,870	20.6
Householder 65 years and over	515	5.7
Households with individuals under 18 years	4,091	45.0
Households with individuals 65 years and over	1,934	21.3
Average household size	2.76	(X)
Average family size	3.21	(X)
<b>HOUSING TENURE</b>		
<b>Occupied housing units</b>	<b>9,092</b>	<b>100.0</b>
Owner-occupied housing units	5,218	57.4
Renter-occupied housing units	3,874	42.6
Average household size of owner-occupied unit	2.68	(X)
Average household size of renter-occupied unit	2.86	(X)

(X) Not applicable.

When an ancestry group is selected, the data in this table refer to the ancestry of the person or householder.

Source: U.S. Census Bureau, Census 2000 Summary File 4, Matrices PCT1, PCT3, PCT4, PCT8, PCT9, PCT10, PCT11, PCT12, PCT14, PCT15, PCT23, PCT26, HCT2, and HCT7.

### 3.2 Socioeconomics

Elmore County had a total of 10,527 housing units (9,092 occupied) and a population density of 9.5 persons per square mile reported in the 2000 Census (Table 3.1). Ethnicity in Elmore County is distributed: white 88.3%, black or African American 3.8%, American Indian or Alaskan Native 1.8%, Asian 2.6%, other race 6.6%.

Specific economic data for individual communities is collected by the US Census; in Elmore County this includes Glenns Ferry, Mountain Home, and the Mountain Home Air Force Base. Glenns Ferry households earn a median income of \$31,500 annually, Mountain Home has a median income of \$35,694, and the Mountain Home Air Force Base reported a median income of \$31,634, all of which compares to the Elmore County median income during the same period of \$35,256. Table 3.2 shows the dispersal of households in various income categories in Elmore County.

Table 3.2. Income in 1999	Elmore County	
	Number	Percent
<b>Households</b>	9,096	100.0
Less than \$10,000	580	6.4
\$10,000 to \$14,999	595	6.5
\$15,000 to \$24,999	1,725	19.0
\$25,000 to \$34,999	1,594	17.5
\$35,000 to \$49,999	2,141	23.5
\$50,000 to \$74,999	1,546	17.0
\$75,000 to \$99,999	553	6.1
\$100,000 to \$149,999	301	3.3
\$150,000 to \$199,999	22	0.2
\$200,000 or more	39	0.4
Median household income (dollars)	35,256	(X)

(Census 2000)

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, directs federal agencies to identify and address any disproportionately high adverse human health or environmental effects of its projects on minority or low-income populations. In Elmore County, a significant number, 8.8%, of families are at or below the poverty level (Table 3.3).

Table 3.3 Poverty Status in 1999 (below poverty level)	Elmore County	
	Number	Percent
<b>Families</b>	606	(X)
Percent below poverty level	(X)	8.8
With related children under 18 years	535	(X)
Percent below poverty level	(X)	13.2
With related children under 5 years	276	(X)
Percent below poverty level	(X)	16.0
<b>Families with female householder, no husband present</b>	210	(X)
Percent below poverty level	(X)	27.9
With related children under 18 years	207	(X)

Table 3.3 Poverty Status in 1999 (below poverty level)	Elmore County	
	Number	Percent
Percent below poverty level	(X)	34.6
With related children under 5 years	73	(X)
Percent below poverty level	(X)	30.7
<b>Individuals</b>		
Percent below poverty level	(X)	11.2
18 years and over	1,599	(X)
Percent below poverty level	(X)	9.3
65 years and over	218	(X)
Percent below poverty level	(X)	10.8
Related children under 18 years	1,199	(X)
Percent below poverty level	(X)	15.0
Related children 5 to 17 years	753	(X)
Percent below poverty level	(X)	13.4

(Census 2000)

The unemployment rate was 3.1% in Elmore County in 1999, compared to 4.4% nationally during the same period. Approximately 7.7% of the Elmore County employed population worked in natural resources, with much of the indirect employment relying on the employment created through these natural resource occupations; Table 3.4 (Census 2000).

Table 3.4 Employment & Industry	Elmore County	
	Number	Percent
Employed civilian population 16 years and over	<b>9,492</b>	<b>100.0</b>
<b>OCCUPATION</b>		
Management, professional, and related occupations	2,571	27.1
Service occupations	1,797	18.9
Sales and office occupations	2,339	24.6
Farming, fishing, and forestry occupations	428	4.5
Construction, extraction, and maintenance occupations	1,006	10.6
Production, transportation, and material moving occupations	1,351	14.2
<b>INDUSTRY</b>		
Agriculture, forestry, fishing and hunting, and mining	730	7.7
Construction	572	6.0
Manufacturing	1,115	11.7
Wholesale trade	206	2.2
Retail trade	1,234	13.0
Transportation and warehousing, and utilities	518	5.5
Information	150	1.6
Finance, insurance, real estate, and rental and leasing	473	5.0
Professional, scientific, management, administrative, and waste management services	503	5.3
Educational, health and social services	1,801	19.0

Table 3.4 Employment & Industry	Elmore County	
	Number	Percent
Arts, entertainment, recreation, accommodation and food services	832	8.8
Other services (except public administration)	436	4.6

Approximately 65.9% of Elmore County’s employed persons are private wage and salary workers, while around 26.0% are government workers (Table 3.5).

Table 3.5 Class of Worker	Elmore County	
	Number	Percent
Private wage and salary workers	6,256	65.9
Government workers	2,464	26.0
Self-employed workers in own not incorporated business	711	7.5
Unpaid family workers	61	0.6

(Census 2000)

### 3.2.1 History of Elmore County

From Elmore County’s Internet Web Site at <http://elmorecounty.org/offices/recorder/history.html> the following information is summarized:

Elmore County was established February 7, 1889, with its county seat at Rocky Bar. Named for the Ida Elmore mines, the area's greatest silver and gold producer of the 1860's. The Oregon Trail crossed the Snake River at Three Island Crossing near Glens Ferry. A station on the overland stage route, originally named Rattlesnake Station, was moved to the railroad line and became Mountain Home. On February 4, 1891 the county seat was moved to Mountain Home.

One hundred and fifty years before the appearance of white explorers this majestic land belonged to the American Indians. The Shoshoni and Bannock Indians roamed Elmore County, winter camping on the bank of the Snake River, returning to the Camas Prairies in late spring. They lived in small extended families surviving on small game, fish, roots, berries, and whatever else they could obtain by using their primitive tools, snares and weapons. A dietary staple for the tribes was the sugar-producing blue flower “camas”. The flower grows wild and abundantly in the high desert. Indian women would harvest the camas root and then prepare it into thin dry cakes. Indian culture was based upon the procurement of food and changed little from generation to generation as they followed their food supply in Elmore County. But, with the arrival of white men this simple nomadic lifestyle ended abruptly.

In 1803 Thomas Jefferson arranged for the United States to buy the Oregon Country from Napoleon Bonaparte. The Oregon Country comprised those states now generally referred to as “The Northwest”, inclusive of Idaho. President Jefferson paid three and three-fifths cents an acre for the land. In 1804 he dispatched two men, Meriweather Lewis and William Clark, to explore the Oregon Country and its’ neighbor the Louisiana Territory. Their tales of a wealth in furs enticed trappers into the area.

The first trappers in Southern Idaho were with John Jacob Astor’s Pacific Fur Company. They made a treacherous journey down the Snake River trying to navigate it in canoes. They were the first white men to make contact with the Shoshoni and Bannock Indians. Soon, other trappers in search of beaver followed. They trapped the waterways extensively until the beaver population was almost extinct by the 1840’s.

The relationship between the Indians and the white men during the fur trapping era was generally peaceful. The trappers lived in a lifestyle similar to that of the Indian, and white exploration and trade did not seriously disrupt Indian social or cultural institutions. The conflict between cultures arose during the next era, when wave after wave of emigrants arrived and settled the west.

Between 1840 and 1862, more than 250,000 emigrants traveled through Elmore County on their way “west”. They traveled the historic Oregon Trail, a grueling 2,000 mile trail that was referred to as the “longest cemetery in the nation”. One of the more hazardous parts of the journey involved crossing the Snake River. A popular ford was located in Elmore County at Three Island Crossing above Glenns Ferry. The crossing was not without risk; many animals, supplies, and wagons were lost. Three Island Crossing is now a state park commemorating the valiant struggles of the early pioneers.

During this early westward period the majority of emigrants passed through Idaho on their way to California or Oregon. Only a handful of pioneers settled in Idaho and they mostly were merchants who supplied the needs of the wagon trains. But in the early 1860’s the discovery of gold in Idaho resulted in a population boom. For the first time in our nation’s history a reverse migration eastward occurred. The California miners returned to Idaho and Alturas County, later to become Elmore County. Alturas is a Spanish name which means “mountain summit or heavens” and was one of the original counties in Idaho. Established on February 4, 1894, Alturas encompassed a huge area in southern Idaho. Old records report the size of Alturas as extending from the north fork of the Boise River, south to the Snake River, and from American Falls west to Indian Creek.

In the beginning years, the county’s population was concentrated in Rocky Bar and Atlanta. These early mining communities reflected a mixture of peoples from all walks of life. Some were petty thieves, shysters, and restless unfortunates who rushed from strike to strike with visions of wealth bright in their eyes. Others were destitute southerners who had lost everything in the Civil War. They came to the gold fields in search of a new start. The influence of these southerners is evident in the names of gold fields; Atlanta, Jeff Davis, and the Southern Confederacy. Also participating in the early mining camps were the Chinese. A census in 1870 showed that the majority of miners were Oriental. The Chinese miners were often willing to work for less, almost slave wages, and had the reputation for being very industrious and clannish miners.

When mining activities in the camps began to show results the character of the mining camps changed. On the heels of the prospectors came permanent settlers. The camps attracted not only faro dealers, bawdy houses, and dance hall girls but also merchants, lawyers, and editors, men and women who were willing to endure the rugged life for the high prices that their services could demand.

By 1896 the district had produced 10,000 ounces of gold. But gold, silver, and other precious metal were not the only things to come out of the Alturas mining camps. A wealth of western stories involving shootings, hangings, and other assorted skullduggery were produced during the heyday of the camps. The story’s characters were always full of grit, courage, warmth, and perseverance. One of the more colorful characters who exemplified these qualities was “Pegleg” Annie Morrow of Atlanta. One winter day while walking with a friend, Dutch Em, across Bald Mountain Summit, a fierce blizzard blew up. Three days passed before a search party found the pair. Dutch Em was dead and Annie was half frozen and incoherent. A back country doctor amputated her frozen feet at the ankles with a jack knife and meat saw, using a few slugs of whiskey for anesthesia. With an indomitable spirit, Pegleg Annie lived for many years



afterwards. She gained further fame as a pistol packing restaurateur, boarding house keeper, mother of five, and friend to all.

Early farmers and ranchers arrived upon the heels of the miners. Small ranches and farms began to spring up around the waystations. The families settled on land near transportation routes and water. Settlement was encouraged by the offer of up to 320 acres to each individual who could make the required land improvements and locate water. This process was called “proving up the land”. The ranchers and farmers continually expanded operations to supply agricultural products to the booming mining communities.

Many farm and ranch families came to Elmore County because of land schemes promoted by the railroad and land developers. Promotional campaigns referred to Idaho as the “Switzerland of the West”, and Mountain Home as the garden spot of southern Idaho. Settlers were promised successful crops, plentiful water, and a healthful climate. The claims, although exaggerated, contained some truth. The land was rich, producing 3 to 5 times as many bushels per acre as land in Illinois, Virginia, or Tennessee. The land was also capable of producing a variety of crops, and prosperous farmers invested in cherries, plums, apples, grain, cattle, horses, and sheep.

Cattle, horse, and sheep raising became important industries in Elmore County. By 1888 the county had 35,000 cows, 60,000 sheep, and 8,000 horses. Wool and mutton production rivaled the cattle and horse industry. Sheep adapted well to the desert and high mountain ranges, although according to cattlemen they ruined the ranges for grazing cattle. Conflict resulted between the Glens Ferry cattlemen and the Mountain Home shepherders. The disagreements persisted until sheep production became more profitable than cattle.

Young Basque men from the Pyrenees Mountains, between France and Spain, provided the labor for the sheep industry. In their native land they had been fishermen, craftsmen, and farmers, but in America, they turned their hands to sheep herding and shearing. These Basque emigrants had a significant cultural impact on Elmore County.

As the communities of Mountain Home, Glens Ferry, Rocky Bar, and Atlanta grew, residents began to push for a new county with a centrally located county seat. The creation of Elmore County was hotly debated. Finally, as its last act, the last Territorial Legislature created Elmore County on February 7, 1889. The county seat changed location several times but in 1891 it settled permanently in Mountain Home.

The period from 1890 to 1913 was known as the growth years for the county. The completion of the OSL, Oregon Short Line, railroad in 1883 allowed for the shipment of mining and agricultural products to world markets. The outbreak of WWI intensified demand for these products, especially wool which was used to manufacture military uniforms. The end of the war also was the end of the agricultural boom. The slump that began in the 20's intensified during the Great Depression. Many small farmers and ranchers lost their land. Economic conditions did not improve significantly in the county until WWII. With the outbreak of WWII crop prices improved and construction of Mountain Home Air Force Base began.

The post-war era heralded permanent changes in the character of the county. The mining industry had collapsed, sheep were replaced by cattle, and farming exploded with the introduction of new technologies. The Air Base remained after the war, although it deactivated for brief periods between 1945 and 1964. The base had a tremendous impact on the community. First, it became the largest employer in the county. Second, the influx of military personnel and their families resulted in a rapid growth of population. Thirdly, business sectors grew to meet the needs of the air base and its military family. And, finally a diverse military

population provided the community with a wealth of cultural diversities unique in the state of Idaho.

Early settlers were attracted to Elmore County because of the promise of unlimited opportunities. These opportunities still exist today. And the future promises to be as exciting, turbulent, and unpredictable as the past.

### **3.3 Description of Elmore County**

Elmore County is located in Southwestern Idaho. It is bounded on the north by Boise County, on the east by Blaine, Camas, Gooding, and Twin Falls counties, on the south by Owyhee County, and on the west by Ada County.

Elmore is a large county covering more than 3,100 square miles. Approximately 60% of the county is mountainous. The remaining 40% slopes gently down into the Snake River Plain. Elmore County has altitudes ranging from 2,500 feet to over 9,700 feet. 70% of the county is owned by varying departments of the federal government including the U.S. Forest Service, the U.S. Department of Defense, and the Bureau of Land Management. Approximately 22% of Elmore County's lands are designated farm lands.

The topography of Elmore County is extremely varied, from low elevation plains to high, steep mountainous terrain. The county is divided into two district provinces, the Northern Rocky Mountain Province-Idaho Batholith, and the Columbia Plateau Province-Snake River Plain in the southern 1/3 of the county.

High glaciated mountains in the northern province, especially the area north of Atlanta, are dotted with several hundred glacial lakes. The terrain is very steep, rocky, and rugged, and much is granite rock covered with alpine vegetation.

The Snake River Plain supports both irrigated agriculture and spring-fall grazing for cattle and sheep. The major limitation to further expansion of agriculture in this area is water. Soils also are a limited factor in a few sections of the Snake River Plain.

#### **3.3.1 Highways**

The main highways weaving through the county are U.S. 30 and Interstate 84. Interstate Hwy I-84 transverses the southern part of the county from northwest to southeast, by passing the two incorporated towns of Mountain Home and Glenns Ferry. I-84 provides adequate on-off ramps for easy access to both cities. I-84 provides the main transportation route for the trucking industry in the northwestern section of the United States. I-84 also provides good connections eastward to Salt Lake City and points beyond.

State highways 51, 67 and 20 converge in Mountain Home, providing a direct link to all of southwestern Idaho. Hwy 67 is a four-lane, ten mile road that provides access to Mountain Home Air Force Base.

#### **3.3.2 Rivers**

The two major rivers in the county are the Snake River and the Boise River. The Snake River serves as the county's natural boundary to the south, while the Boise River provides a northern boundary. Other important bodies of water in the county are the C.J. Strike Reservoir, which is fed by the Snake River, and the Anderson Ranch Reservoir, which is fed by the South Fork of the Boise River.

### **3.3.3 Temperature**

The highest temperature on record in Atlanta was 101 degrees (F). The lowest temperature was minus 19 degrees (F). Typically Atlanta has only 6 days a year with temperatures above 90 degrees (F) and 232 days a year with temperatures below 32 degrees (F).

Mountain Home temperature extremes have varied between 110 degrees (F) to minus 36 degrees (F). The town has temperatures above 90 degrees (F) on the average 55 days annually. During 146 days a year the temperature falls to 32 degrees (F) or below.

Glenns Ferry on average has 62 days annually with temperatures above 90 degrees (F) and 146 days when temperatures fall below 32 degrees (F).

### **3.3.4 Growing Season**

Atlanta has the shortest growing season in the county with only 21 days. Mountain Home enjoys 136 days when temperatures are above 32 degrees (F), May 16 to September 29. The Glenns Ferry area averages 143 days of temperatures above freezing, May 5 to September 26.

### **3.3.5 Days of Sunshine**

In July and August there is an 80% to 85% chance of sunshine in Elmore County. The months with the least cloud cover, and therefore the sunniest days occur between June and September.

### **3.3.6 Winds**

Wind speeds average 6 miles per hour or less 39% of the time, and 7 to 15 miles per hour 41% of the time. Damaging winds are rare. Wind directions are quite variable. Predominantly they blow from the northwest but occasionally blow from the east to east-southeast. Strong winds are generally from the west to northwest. February to April are the windiest months with wind speeds of 22 mph or greater occurring 4% of the time. Thunderstorms accompanied by strong winds occur most frequently in June and July. Tornadoes are very rare, but one was reported in the Mountain Home area in the summer of 1986.

### **3.3.7 Fog, Low Visibility, Low Clouds**

Fog, low visibility, and low clouds are a common wintertime phenomena. The phenomena occurs with the greatest frequency in the month of December, 11% of the days are foggy in December. The fog is not usually dense however and Mountain Home Air Force Base reports visibility of one mile or more 99% of the time. The base also reports that 99% of the time the cloud deck is 500 feet or higher.

### **3.3.8 Inversions**

An inversion is a climatological phenomena where the air temperature gets warmer with an increase in altitude. This traps cold air under warm air. Inversions occur normally throughout the year but are of particular interest in the winter because air pollutants get trapped in the stagnant air. Wood burning stoves contribute significantly to the air pollution problems in the winter months.

About 75% of winter days begin with inversions in Elmore County. Typically the inversion will clear before days end, and rarely is air quality adversely affected. To impact upon air quality, inversions must remain static for three days or more.

### **3.3.9 Forestry, Agriculture & Livestock**

Over the past century, employment through agricultural farming, timber harvesting and livestock ranching has been significant in the region. Forestry, logging, trucking, and related support industries have relied on timber harvests from this region. Livestock ranching has been and continues to be an important component of the economy of Elmore County. Livestock grazing in Elmore and surrounding Counties has provided stable employment while serving to keep rangelands and forestlands alike maintained at a lower wildfire risk than if they had not been present and managed.

Since 1950, Elmore County has become more urban and less rural. The late 1980's proved this statement as Elmore County incomes increased, agriculture began to consolidate, and service industries developed in the County. Agriculture, mining, and timber processing have historically been important to Elmore County and the State. Agriculture is the major contributor to the economic stability of the County. In the 1960's, more water became available for irrigation through pumping from the Snake River and drilling ground water wells. This brought about an increase in irrigated cropland. Potatoes, sugar beets, and beans are crops that are highly productive. Mint became a good alternate crop, and watermelon and cantaloupe have become major fruit crops in the southeastern part of the County.

#### **3.3.9.1 Elmore County's Forest Management Goals**

Most of the timber in the County is on federal land. There are less than 20,000 acres of private lands that could be classified as timberlands. Within the Boise National Forest, there are visible signs of tree damage due to disease and insect invasions. Federal and state land management agencies are taking action to reduce disease and insect related tree kill, which will also reduce dead fuel for wildfire. Much of Elmore County's forested area is being used under a multiple use concept such as timber production, livestock grazing, wildlife habitat, recreation, and watershed protection. Certain areas are classified as critical, have been set aside for a specific use, and should continue to be managed for that use.

##### **Forest Goal 1** *(from the Elmore County Comprehensive Plan 2004)*

To manage the forests so they remain in a continuously productive state, without degradation of the soil, water and air resources, range and wildlife resources, and scenic and recreation value for the benefit of the greatest number of people.

##### **Forest Objectives** *(from the Elmore County Comprehensive Plan 2004):*

1. Encourage proper multiple-use management and protection of the forests as a continuously productive natural resource.
2. Work with local, State and Federal land agency officials to provide open access to public lands especially during summer and fall seasons.

#### **3.3.9.2 Elmore County's Range Management Goals**

Rangeland is generally divided into winter, spring/fall, and summer range depending upon elevation and location. Over 65% of land in Elmore County are classified as rangeland. The Bureau of Land Management (BLM) and Forest Service administer the majority of the public lands in the County. Range fires occur frequently in the Snake River Plains during summer. When this happens the land is usually seeded to select grasses in the fall so better forage cover is obtained.

### **Rangeland Goal 1** *(from the Elmore County Comprehensive Plan 2004)*

To improve the range resources of Elmore County.

#### **Rangeland Objectives** *(from the Elmore County Comprehensive Plan 2004):*

1. Encourage management that will increase the production of feed for livestock and wildlife.
2. Encourage reclamation that will decrease the amount of run-off and erosion.
3. Work with public and private land managers and encourage range fire rehabilitation practices, which include grasses and shrubs to enhance the forage base of the County's rangeland.
4. Support preparation, adoption and implementation of a wildfire Management Plan for Elmore County.

#### **3.3.9.3 Integration of these Goals**

The Wildland-Urban Interface Wildfire Mitigation Plan has been developed to integrate the above stated goals and objectives, to adhere to this management philosophy, and implement, through targeted fuels management, policy development, and educational objectives, the goals enumerated above.

### **3.3.10 Recreation**

Elmore County has many outstanding tourism and recreational facilities. The county offers a full panorama of recreational opportunities ranging from the sand dunes in Bruneau to skiing on Soldier Mountain.

#### **3.3.10.1 National Forests**

There are two U.S. National Forest systems in the county, the Boise National Forest and the Sawtooth National Forest. Campsites are maintained by the forest services. Both Districts offer visitors a variety of activities ranging from beginning hiking trails, to wilderness camping to backpacking.

#### **3.3.10.2 Three Island Crossing State Park**

Three Island State Park at historical Three Island Crossing Ford, stands as a modern monument to the courage and foresight of the Oregon pioneers who used the natural islands and sand bars to cross the Snake River on their way to the Pacific Northwest. The park is located in Glens Ferry. A visitor center contains photographs, memorabilia, and information helpful to understanding the importance of this crossing on the Oregon Trail. Wagon ruts from the Oregon Trail are still visible in the park.

#### **3.3.10.3 Bruneau Dunes**

Twenty miles south of Mountain Home the two largest sand dunes in North America can be found. The dunes have formed in the Eagle Cove Depression, a former part of the Snake River Canyon which remained after the river changed its course during the Great Bonneville Flood. The sand is decomposed lava rock blown off the plateau to the south and dropped when the winds lose velocity. It has been collecting for over 30,000 years. Hikers will find early morning

and late evening the best times for viewing desert wildlife and seasonal wildflowers. But, climbing the dunes at any time is great fun.

#### **3.3.10.4 Boating**

Boating is a very popular activity in Elmore County. During warm, still, summer days, speed boats and water skiers can be seen gliding across the two large reservoirs. But, let a breeze begin to blow and a bevy of bright colored sail boats and wind surfers join in the fun. The Southern Idaho Sailing Association holds several regattas during the summer racing season at C.J. Strike Reservoir.

The two major boating facilities in the county are Anderson Ranch Reservoir and C.J. Strike Reservoir. Both reservoirs have docking facilities.

#### **3.3.10.5 Camping**

Camping is another popular activity enjoyed by the residents of Elmore County. There are more than 250 maintained campsites in the county. The amenities vary from full RV hookup to only a cleared tent site.

#### **3.3.10.6 Fishing and Hunting**

Fishing and hunting are another popular past time. A wide variety of fish can be caught in Elmore County including: trout, sturgeon, bass, catfish, whitefish, perch, and kokanee. The Snake River and the South Fork of the Boise River provide excellent fishing. But many local fisherman claim the best fishing “hole” is in one of the numerous little mountain lakes and streams that dot the county.

For those people who prefer a gun or bow to a fly rod, Elmore County offers a bounty of hunting experiences. Wild birds and game, like deer, elk, bear, mountain goat, pheasant, quail, partridge, chukar, sage, grouse, wild duck, geese, doves, and brant are found in abundance in Elmore County.

#### **3.3.10.7 Skiing**

For those people who enjoy winter sports, Elmore County has a variety of activities to interest them. Skiers will be exhilarated by the challenging downhill slopes at the Soldier Mountain Ski Resort. Cross country skiers will find well groomed trails in the Boise National Forest. Snowmobilers are not left out, designated snowmobile areas are located in the county.

The economic impacts of these activities to the local economy and the economy of Idaho have not been enumerated. However, they are substantial given the many months of the year that activities take place and the staggering numbers of visitors that travel to this location.

### **3.3.11 Resource Dependency**

The communities of Elmore County have been evaluated by the University of Idaho College of Natural Resources Policy Analysis Group (PAG) for the degree of natural resource dependency each community experiences.

Idaho communities with more than 10% employment in resource-based sectors (wood products, travel & tourism, agriculture, and mining) were evaluated by Harris *et al.* (2003). Their findings indicate the following (Harris *et al.* 2000):

- Glens Ferry .....Agriculture Only
- Grand View .....Agriculture Only

From 1993 to 1998 sawmill capacity dropped rapidly in response to dwindling public log supplies. Only two of five dominant companies operating in 1995 were still operating in 1998, and one of these, Boise Cascade, closed two of its large sawmills during this period. In the mid-1980s Boise Cascade operated three sawmills, one plywood mill and a finishing-planer mill. Idaho closures included its Council and Horseshoe Bend sawmills. Only two facilities remained open in 1999, the sawmill in Cascade and a plywood mill in Emmett. In the last few years, both of these mills closed, along with Croman’s mill (Harris *et al.* 2000).

Harris *et al.* (2003) further evaluated Idaho communities based on their level of direct employment in several industrial sectors. Their findings for communities in Elmore County are summarized in Table 3.6.

**Table 3.6. Levels of direct employment by industrial sector**

Community	Economic Diversity Index	Agriculture	Timber	Travel and Tourism	State / Local Gov.	Federal Gov.	Mining and Minerals
Glens Ferry	Med. Low	Med. High	Low	Low	Med. High	High	Low
Mountain Home	Med. High	Med. Low	Low	Med. Low	Med. Low	High	Low
Grand View	Med. Low	High	Low	Med. Low	Med. High	Med. Low	Low

A “low” level of direct employment represents 5% or less of total employment in a given sector; “med. low,” 6 to 10%; “med. high” 11 to 19%; and “high” 20% or more of total employment in a given sector.

Source: Harris *et al.* 2000

### 3.4 Planning and Zoning

#### 3.4.1 Building Permit Requirements

The following is summarized from information provided by the Elmore County Building Department. More data can be found on the Internet at <http://elmorecounty.org/offices/p&z/permits.html>.

- A building permit shall be obtained before construction begins.
- Constructing, altering, or adding to a structure or moving a structure from one location to another requires a building permit.
- Manufactured (modular, mobile) structures require a permit for the tie-downs.
- Plans for the construction of foundations and/or basements on which the manufactured structure sets are required.
- Structures shall be located within setback requirements and shall not be located on utility, road, or irrigation easements or rights-of-way.
- Fences six feet (6') and under are not required to have a building permit, however, the owner is advised that, if it becomes necessary to remove the fence, it will be done at the owner's expense.

- Fences shall not interfere with visibility at intersections.

### **3.4.2 Information on Plans and Specifications**

- Plans and specifications are required PRIOR to issuance of a building permit.
- Plans (drawings) shall be drawn to a professional standard, to scale, upon substantial paper, and be of sufficient clarity to indicate the nature and extent of the work proposed.
- Plans shall include a plot plan showing the location of all existing and proposed structures on the parcel and their distance from the property lines and road rights-of-way.
- Plans shall contain floor plans that include foundations and/or basements, all floor levels, lofts, patios, porches, balconies, carports, garages, and outbuildings.
- Plans shall include exterior structure dimensions and square footage with separate figures for living space, basement, carport/deck, garage, etc. (UBC 106).

#### **3.4.2.1 Drawings**

Cross-section drawings of building(s) shall include:

- Footings and foundations;
- Spans for floor joists and materials (clearance between bottom of floor joist, or bottom floors without joists, and the ground shall be no less than 18 inches; minimum under girders shall be 12 inches);
- Spans for roof trusses or stacked roof--include type of materials to be used; Spacing of wall studs and materials used; Type of finishing materials (interior/exterior).
- Computation, stress diagrams, and other data sufficient to show the correctness of the plan shall be submitted when required by the building official.
  - Footings - 24 inches deep (below frost line or back filled)
  - Snow load in recreation area -- 120 lbs. p/s/f/ live load.
  - Snow load for remaining area -- 30 lbs. p/s/f/ live load.

### **3.5 Emergency Service Coordination**

Elmore County Growth and Development has been tasked with the Enhanced 911 service coordination in the County. The Elmore County Enhanced 911 Board operates a Street Name Committee and holds periodic coordination meetings (first Tuesday of each month). Some of the recent (2003) accomplishments of the Board include:

- The Enhanced 911 addressing and street naming is completed in Atlanta, Hammett, King Hill, Mayfield, Pine, Featherville, Prairie, Tipanuk and Glens Ferry.
- The official notification letters to each resident of the Chattin Flats area issuing their new address were mailed in March 2003.
- The area within the Mountain Home City Limits is holding ongoing meetings to decide the best way to address the area.



- The Rural Mountain Home Area is proceeding in a timely manner. The geographic area has been divided into four quadrants designated Northwest, Northeast, Southwest and Southeast. At this time, plans are to begin notifying citizens of any necessary address changes in the Southwest area.

Enhanced 911 service is a critical component to facilitating the timely and accurate response of emergency services across the county, including wildland fire response. With enhanced 911 service the operator answering a 911 call is able to pinpoint the caller's location from the telephone number, relating the database to their address and best routes to use when responding. Elmore County is ahead of other counties in the west with the on-going accomplishments of this committee. When coupled with the superior street signs posted across the county, this service provides excellent response-ability to emergency service providers.

### 3.6 Growth and Development

Elmore County is currently in the process of developing a Comprehensive Growth and Development Plan. The Elmore County Comprehensive Plan is a guide that establishes goals and objectives to help the County grow and develop. The Elmore County Comprehensive Plan includes a forecast of conditions that are anticipated to occur within the next ten-year period, 2003 to 2013.

The Elmore County Comprehensive Plan is directed toward all land within the County including Federal, State, Public and Private lands. This Wildland-Urban Interface Wildfire Mitigation Plan is developed to dove-tail with the goals and objectives of the Comprehensive Plan. For more details on the Comprehensive plan, contact the Elmore County Director of the Growth and Development Office.

#### 3.6.1 Population

The year 2000 US Census established the Elmore County population at 29,725. Table 3.7 shows historical changes in population among the various communities within Elmore County (adapted from the Elmore County Comprehensive Plan 2004).

**Table 3.7. Historical and Current Population by Community.**

Community	1980	1990	2000	2004
Elmore County	21,565	21,205	29,725	30,700
Mountain Home	7,540	7,913	11,143	12,000
Glenns Ferry	1,374	1,404	1,611	1,640
Hammett	500	500	720	760
Pine / Featherville	150	170	370	420
King Hill	250	200	220	240
Prairie	60	80	120	150
Mayfield / Simco	65	75	105	120
Tipanuk	20	60	130	150
Oasis	12	30	80	115
Atlanta	35	40	60	70
Chattin Flats	20	22	40	40

**Source: U.S. Census Records and research with U.S. Postal Service and Utility Companies**

In 1950, Mountain Home and Glens Ferry were similar sized communities. When the Mountain Home Air Force Base became a strategic Aerospace Wing Base in the late 1950's the population of Mountain Home and Elmore County increased significantly. The population information presented in Table 2.7 shows the dynamic relationship between military development at the Air Base and growth in Elmore County. Economists and military planners estimate that at least fifty percent of growth and development in Elmore County can be attributed to Mountain Home Air Force Base. Because of this symbiotic relationship, any change in the Base staffing or mission has a direct input to growth or decline in Elmore County, particularly in the City of Mountain Home.

Based on forecast information provided by the US Department of Defense and Mountain Home Air Force Base officials, plus the Idaho Power Company, Idaho Department of Commerce, and research by Wayne S. Forrey, AICP, the recommended population projection for the Elmore County Comprehensive Plan includes a substantial population increase during the next 10 to 15 years. This Population projection is presented in Table 3.8. This projected population increase represents about 9,000 new residents to Elmore County during the next 10 years.

**Table 3.8. Year 2020 Population Forecast by Community**

Community	2005	2010	2015	2020
Elmore County	31,200	35,700	40,200	44,700
Mountain Home	12,100	14,400	16,300	18,050
Glens Ferry	1,680	1,800	1,870	2,100
Hammett	790	910	1,020	1,250
Pine / Featherville	470	570	810	1,150
King Hill	250	270	310	350
Prairie	160	190	320	400
Mayfield / Simco	125	160	230	400
Tipanuk	150	165	180	200
Oasis	118	125	145	170
Atlanta	70	75	90	120
Chattin Flats	40	50	60	80

### **3.7 Cultural Resources**

Cultural resource impacts were qualitatively assessed through a presence/absence determination of significant cultural resources and mitigation measures to be employed during potential fire mitigation activities such as thinning and prescribed fire.

The United States has a unique legal relationship with Indian tribal governments defined in history, the U.S. Constitution, treaties, statutes, Executive Orders, and court decisions. Since the formation of the union, the United States has recognized Indian tribes as domestic dependant nations under its protection. The Federal Government has enacted numerous regulations that establish and define a trust relationship with Indian tribes.

The relationship between Federal agencies and sovereign tribes is defined by several laws and regulations addressing the requirement of Federal agencies to notify or consult with Native American groups or otherwise consider their interests when planning and implementing Federal undertakings, among these are:

- **EO 13175, November 6, 2000**, Consultation and Coordination with Indian Tribal Governments.
- **Presidential Memorandum, April, 1994**. Government-Government Relations with Tribal Governments (Supplements EO 13175). Agencies must consult with federally recognized tribes in the development of Federal Policies that have tribal implications.
- **EO 13007, Sacred sites, May 24, 1996**. Requires that in managing Federal lands, agencies must accommodate access and ceremonial use of sacred sites and must avoid adversely affecting the physical integrity of these sites.
- **EO 12875, Enhancing Intergovernmental Partnerships, October 26, 1993**. Mainly concerned with unfunded mandates caused by agency regulations. Also states the intention of establishing “regular and meaningful consultation and collaboration with state, local and tribal governments on matters that significantly or uniquely affect their communities.”
- **Native American Graves Protection and Repatriation Act (NAGPRA) of 1989**. Specifies that an agency must take reasonable steps to determine whether a planned activity may result in the excavation of human remains, funerary objects, sacred objects and items of cultural patrimony from Federal lands. NAGPRA also has specified requirements for notifying and consulting tribes.
- **Archaeological Resources Protection Act (ARPA), 1979**. Requires that Federal permits be obtained before cultural resource investigations begin on Federal land. It also requires that investigators consult with the appropriate Native American tribe prior to initiating archaeological studies on sites of Native American origin.
- **American Indian Religious Freedom Act (AIRFA), 1978**. Sets the policy of the US to protect and preserve for Native Americans their inherent rights of freedom to believe, express, and exercise the traditional religions of the American Indian . . . including, but not limited to access to sacred sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites.
- **National Environmental Policy Act (NEPA), 1969**. Lead agency shall invite participation of affected Federal, State, and local agencies and any affected Indian Tribe(s).
- **National Historic Preservation Act (NHPA), 1966**. Requires agencies to consult with Native American tribes if a proposed Federal action may affect properties to which they attach religious and cultural significance. (Bulletin 38 of the act, identification of TCPs, this can only be done by tribes.)
- Treaties (supreme law of the land) in which tribes were reserved certain rights for hunting, fishing and gathering and other stipulations of the treaty.
- Unsettled aboriginal title to the land, un-extinguished rights of tribes.

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their proposals on historic properties, and to provide state historic preservation officers, tribal historic preservation officers, and, as necessary, the Advisory Council on Historic Preservation a reasonable opportunity to review and comment on these actions.

Elmore County is within the Aboriginal territory boundary of the Western Shoshone and Paiute Tribes now occupying the Duck Valley Reservation to the south of Elmore County in Owyhee County, Idaho and Elko County, Nevada. Today, the southern edge of Elmore County is approximately 50 miles north of the northern tip of the Duck Valley Reservation boundary.



The Duck Valley Reservation was established in 1877 and enlarged in 1886. The reservation is located on the Idaho-Nevada border with approximately half of the land area in each state. The Shoshone-Paiute Tribes have retained all of the 289,820 acre land area as Tribal Trust land governed by the Tribal Council.

Agriculture is the economic mainstay of the reservation. Short growing seasons affect production ability on the approximately 87,000 acres that are suitable for farming and irrigation. The majority of the land serves as grazing land for the cattle and horses raised by members of the Tribes.

Recreation and tourism industries are being developed to help diversify the economy. There are two major fisheries on the reservation: Sheep Creek and Mountain View Reservoirs. The addition of a third reservoir, Billy Shaw, has been recently constructed. There is a tremendous diversity of waterfowl and shorebirds that are attracted to the lakes and surrounding wetlands in the spring. Camping facilities are being improved to attract a greater number of visitors to these lakes for fishing, hiking, bird watching, and relaxation.

The Fort Hall Indian Reservation is located approximately 120 miles due east of Elmore County and is home to the Shoshone and Bannock Indians. Before recorded history, the Shoshone and Bannock originally roamed the areas of what is now the states of Wyoming, Utah, Nevada, and Idaho. In their search for food, they hunted, gathered, and fished for salmon. Horses introduced in the early 1700s allowed some groups to travel great distances in pursuit of buffalo.



A Presidential Executive Order established the 1.8 million acre Fort Hall Reservation in 1867 and was confirmed by the Fort Bridger Treaty of 1868. A survey error reduced the size of the Reservation to 1.2 million acres in 1872 and other encroachments reduced the Reservation to its present size.

Typical archeological sites associated with the Shoshone, Paiute, and Bannock Indians include lithic scatters, village sites, rock art, and hunting blinds. The Shoshone, Bannock, and Paiute Tribes had a network of trails throughout the area which included various trade routes, as well as gathering and hunting routes. Some of the same trails were later used by homesteaders and miners.

Traditional Cultural Properties (TCPs) are cultural resources defined as a significant place or setting, and does not necessarily have any associated material remains. For example, a TCP can be a mountain, river, or natural feature (i.e., rock formation, meadow, etc.). Some of these are present in Elmore County. Many of these sites are at risk from wildland fire due to the increase in fuel accumulation since historic times. The integrity of some cultural resources has been impacted in the past by logging activities, road building, mining, and grazing.

The National Park Service maintains the National Register of Historical Places as a repository of information on significant cultural locale. These may be buildings, roads or trails, places where historical events took place, or other noteworthy sites. The NPS has recorded sites in its database. These sites are summarized in Table 3.9.

**Table 3.9. National Register of Historic Places in Elmore County, Idaho.**

<b>Item Number</b>	<b>Resource Name</b>	<b>Address</b>	<b>City</b>	<b>Listed</b>	<b>Multiple</b>
1	Ake, F. P., Building	106-72 Main St.	Mountain Home	1982-11-17	Tourtellotte and Hummel Architecture TR
2	Amustutz Apartments	320 S. Ada St.	Glenns Ferry	1982-09-23	
3	Anchustegui, Pedro, Pelota Court	W. 2nd, North	Mountain Home	1978-01-30	
4	Atlanta Dam and Power Plant	W of Atlanta on Boise River	Atlanta	1977-10-05	
5	Atlanta Historic District	Quartz Creek, Pine and Main Sts.	Atlanta	1978-04-06	
6	Atlanta Ranger Station Historic District	Boise National Forest	Atlanta	2003-01-23	
7	Elmore County Courthouse	150 S. Fourth E	Mountain Home	1987-09-22	County Courthouses in Idaho MPS
8	Father Lobell House	125 4th St., East	Mountain Home	1982-11-17	Tourtellotte and Hummel Architecture TR
9	Glenns Ferry School	Cleveland St.	Glenns Ferry	1984-09-07	
10	Gorby Opera Theater	Idaho St.	Glenns Ferry	1982-11-17	Tourtellotte and Hummel Architecture TR
11	Guffey Butte--Black Butte Archeological District	Address Restricted	Unknown	1978-10-10	
12	McGinnis, J. S., Building	1st and Commercial Sts.	Glenns Ferry	1982-11-17	Tourtellotte and Hummel Architecture TR
13	Mountain Home Baptist Church	265 N. 4th, East	Mountain Home	1982-11-17	Tourtellotte and Hummel Architecture TR
14	Mountain Home Carnegie Library	180 S. 33rd St., East	Mountain Home	1978-07-24	
15	Mountain Home High School	550 E. Jackson	Mountain Home	1991-08-08	Public School Buildings in Idaho MPS
16	Mountain Home Hotel	195 N. 2nd, West	Mountain Home	1982-10-29	
17	O'Neill Brothers Building	Idaho St.	Glenns Ferry	1982-11-17	Tourtellotte and Hummel Architecture TR
18	Our Lady of Limerick Catholic Church	113 W. Arthur	Glenns Ferry	1982-11-17	Tourtellotte and Hummel Architecture TR
19	South Boise Historic Mining District	In Boise and Sawtooth National Forests	Rocky Bar and	1975-12-30	
20	St. James Episcopal Church	305 N. 3rd, East	Mountain Home	1977-10-05	
21	Turner Hotel	140-170 E. Jackson St.	Mountain Home	1984-09-07	(NRHP 2003)

Fire mitigation activities in and around these sites has the potential to affect historic places. In all cases, the fire mitigation work will be intended to reduce the potential of damaging the site due to wildfire. Areas where ground disturbance will occur will need to be inventoried depending on the location. Such actions may include, but not be limited to, constructed firelines (handline, mechanical line, etc.), new roads to creeks to fill water tankers, mechanical treatments, etc. Only those burn acres that may impact cultural resources that are sensitive to burning (i.e., buildings, peeled bark trees, etc.) would be examined. Burns over lithic sites are not expected to have an impact on those sites, as long as the fire is of low intensity and short duration. Some areas with heavy vegetation may need to be examined after the burn to locate and record any cultural resources although this is expected to be minimal. Traditional Cultural Properties (TCPs) will also need to be identified. Potential impact to TCPs will depend on what values make the property important and will be assessed on an individual basis.

### **3.8 Transportation**

Primary access to and from Elmore County is provided by Interstate I-84, a four-lane highway which traverses the county from the southwestern side (from Boise), through Mountain Home, then Glenns Ferry, and King Hill, where it exits the county on the southeastern side. This access is a primary east-west route for transportation networks in the area, and a part of the nation's east-west connecting routes for major transportation networks. US Highway 20 connects Mountain Home to Hill City, and via a county road connection to the northern Elmore County communities of Pine, Featherville, Dixie, Rocky Bar, and Atlanta. County and US Forest Service maintained roads access the communities of Prairie and Mayfield. State Highway 51 provides links from Mountain Home south through the community of Bruneau and then the Duck Valley Reservation, both located outside of Elmore County. The Airbase Road becomes the Grandview Road providing access from Mountain Home to the Mountain Home Air Force Base and then to the community of Grand View. Mountain Home serves as the hub of Elmore County's transportation networks.

Smaller access roads (some gravel) provide access to the adjoining areas within the county. A variety of trails and closed roads are to be found throughout the region.

Almost all of the roads in the county were originally built to facilitate logging and farming activities. As such, all of these roads can support timber harvesting equipment, logging trucks, and fire fighting equipment referenced in this document. However, many of the new roads have been built for home site access, especially for new sub-divisions of homes. In most cases, these roads are adequate to facilitate firefighting equipment as they adhere to County Building Codes. County building codes for new developments should be adhered to closely to insure this tendency continues.

Transportation networks in the county have been challenged by a limited number of communities with only one, two, or three access points suitable for use during an emergency. The community of Atlanta is a prime example. Over the past 10 years, Atlanta has been threatened by wildfire on three occasions. During the preparation of this plan (2003), the community of Atlanta was threatened by the Hot Creek fire. This wildfire compromised the Middle Fork of the Boise River Road soon after ignition. This access point was the primary access route for residents of Atlanta to access other communities. A secondary road, the James Creek Road provides access from near Atlanta to Rocky Bar, Featherville, Pine, and finally Mountain Home. However, this road is a single lane, gravel/dirt road unsuitable for passenger vehicles with limited traction and clearance. This quickly became the only ingress and egress route for this community during the wildfire. Unfortunately, one bridge on this road possessed a limited carrying capacity restricting the weight of vehicles crossing over it. Within 3 days of the loss of the main access (Middle Fork of the Boise River Road), the James Creek Road was

compromised as well eliminating the last of the drivable access roads to Atlanta. Access was managed by the US Forest Service through these two roads during the fire.

To further complicate matters, after the wildfire was contained and extinguished, heavy rains on the burn area caused mudslides that again shut down the Middle Fork of the Boise River Road redirecting all traffic again to the James Creek Road. The authors of this plan do not believe these two hazard events could have been prevented, however, we do feel that the condition of the only alternate access road (James Creek Road) to and from Atlanta could have been maintained at a higher level of preparedness in terms of the surface quality, bridge crossings, turnouts, and related factors. The James Creek Road is an example of an access route that through improvements would benefit the residents and visitors of Atlanta while facilitating wildfire fighting efforts in the future.

Other communities that may be at-risk because of limited access include Rocky Bar, Featherville, Pine, and Prairie.

### 3.9 Vegetation & Climate

Vegetation in Elmore County is a mix of forestland and rangeland ecosystems. An evaluation of satellite imagery of the region provides some insight to the composition of the forest vegetation of the area. The full extent of the county was evaluated for cover type as determined from Landsat 7 ETM+ imagery in tabular format, Table 2.8.

The most represented vegetated cover type is Basin & Wyoming Big Sagebrush at approximately 16% of the total area. The next most common vegetation cover type represented is Warm Mesic Shrubs at 13%. Perennial Grassland is the third most common plant cover type at 10% along with Shrub/Steppe Annual Grass-Forb (9%). Agricultural land represents only 8% of the county's total area, but characterizes almost 151,100 acres. None of the remaining ground cover types total in excess of 10% in any one category (Table 3.10).

<b>Table 3.10. Cover Types in Elmore County</b>		<b>Percent of County's Total Area</b>
	<b>Acres</b>	
Basin & Wyoming Big Sagebrush	309,043	16%
Warm Mesic Shrubs	266,703	13%
Perennial Grassland	197,409	10%
Shrub/Steppe Annual Grass-Forb	174,962	9%
Agricultural Land	151,096	8%
Douglas-fir	137,231	7%
Herbaceous Burn	135,116	7%
Bitterbrush	128,386	6%
Mountain Big Sagebrush	84,492	4%
Salt-desert Shrub	76,551	4%
Lodgepole Pine	44,414	2%
Rabbitbrush	40,193	2%
Mixed Subalpine Forest	33,707	2%
Mixed Xeric Forest	21,752	1%
Aspen	21,456	1%
Shrub Dominated Riparian	20,013	1%
Subalpine Fir	18,481	1%
Open Water	14,066	1%

<b>Table 3.10. Cover Types in Elmore County</b>		<b>Percent of County's Total Area</b>
	<b>Acres</b>	
Douglas-fir/Lodgepole Pine	13,437	1%
Perennial Grass Slope	13,389	1%
Subalpine Pine	10,840	1%
Low Sagebrush	10,221	1%
Montane Parklands and Subalpine Meadow	7,094	0%
High Intensity Urban	7,072	0%
Ponderosa Pine	6,669	0%
Exposed Rock	6,551	0%
Mountain Low Sagebrush	6,458	0%
Needleleaf Dominated Riparian	6,177	0%
Foothills Grassland	5,375	0%
Wet Meadow	3,346	0%
Mixed Needleleaf/Broadleaf Forest	2,486	0%
Graminoid or Forb Dominated Riparian	2,217	0%
Broadleaf Dominated Riparian	2,096	0%
Low Intensity Urban	1,897	0%
Disturbed, Low	881	0%
Deep Marsh	704	0%
Shallow Marsh	659	0%
Subalpine fir/Whitebark Pine	648	0%
Mud Flat	160	0%
Mixed Barren Land	59	0%
Disturbed, High	12	0%
Alpine Meadow	4	0%

Vegetative communities within the county follow the strong moisture and temperature gradient related to the major river drainages. Limited precipitation and arid conditions result in a relatively parched environment in the southern portion of the county, limiting vegetation to drought-tolerant plant communities of grass and shrublands, with scattered clumps of ponderosa pine and Douglas-fir at the higher elevations in the north end of the county. As moisture availability increases, so does the abundance of conifer species, with subalpine forest communities present in the highest elevations where precipitation and elevation provide more available moisture during the growing season.

### **3.9.1 Forests**

Most of the timber in the County is on federal land. There are less than 20,000 acres of private lands that could be classified as timberlands. Within the Boise National Forest, there are visible signs of tree damage due to disease and insect invasions. Federal and state land management agencies are taking action to reduce disease and insect related tree kill, which will also reduce dead fuel for wildfire. Based on lessons learned in the "Foothills Fire", fire-fighting agencies are developing a Fire Management Plan to protect Elmore County from devastating range and forest fires. Much of Elmore County's forested area is being used under a multiple use concept such as timber production, livestock grazing, wildlife habitat, recreation, and watershed protection. Certain areas are classified as critical, have been set aside for a specific use, and should continue to be managed for that use.



## Forest Goal 1

To manage the forests so they remain in a continuously productive state, without degradation of the soil, water and air resources, range and wildlife resources, and scenic and recreation value for the benefit of the greatest number of people.

### Forest Objectives:

1. Encourage proper multiple-use management and protection of the forests as a continuously productive natural resource.
2. Work with local, State and Federal land agency officials to provide open access to public lands especially during summer and fall seasons.

## 3.9.2 Rangeland

Rangeland is generally divided into winter, spring/fall, and summer range depending upon elevation and location. Over 65% of land in Elmore County are classified as rangeland. The Bureau of Land Management (BLM) and Forest Service administer the majority of the public lands in the County. Range fires occur frequently in the Snake River Plains during summer. When this happens the land is usually seeded to select grasses in the fall so better forage cover is obtained.

### Rangeland Goal 1

To improve the range resources of Elmore County.

### Rangeland Objectives:

1. Encourage management that will increase the production of feed for livestock and wildlife.
2. Encourage reclamation that will decrease the amount of run-off and erosion.
3. Work with public and private land managers and encourage range fire rehabilitation practices, which include grasses and shrubs to enhance the forage base of the County's rangeland.
4. Support preparation, adoption and implementation of a wildfire Management Plan for Elmore County.

## 3.9.3 Monthly Climate Summaries In or Near Elmore County

### 3.9.3.1 Grand View 2 W, Idaho (103760)

Period of Record Monthly Climate Summary

Period of Record : 4/ 1/1933 to 7/31/2003

Table 3.11 Climate records for Grand View, Idaho (Elmore County)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	39.7	48.2	58.3	67.6	76.5	84.6	94.2	92.4	81.8	68.5	51.8	41.3	67.1
Average Min. Temperature (F)	20.4	25.0	29.6	36.4	44.2	51.3	56.4	53.5	44.1	34.8	26.8	21.6	37.0
Average Total	0.72	0.52	0.71	0.67	0.89	0.79	0.20	0.19	0.43	0.46	0.70	0.60	6.88

**Table 3.11 Climate records for Grand View, Idaho (Elmore County)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation (in.)													
Average Total SnowFall (in.)	2.6	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.9	5.6
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record. Max. Temp.: 95.4% Min. Temp.: 95%  
 Precipitation: 93.6% Snowfall: 92.8% Snow Depth: 86.6%

### 3.9.3.2 Bruneau, Idaho (101195)

Period of Record Monthly Climate Summary

Period of Record : 6/ 1/1962 to 7/31/2003

**Table 3.12 Climate records for Bruneau, Idaho (Owyhee County)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	40.6	48.5	58.1	66.0	75.5	84.5	93.3	91.8	81.5	68.6	51.7	40.4	66.7
Average Min. Temperature (F)	23.2	26.6	31.1	36.4	44.2	51.5	56.8	55.0	45.8	36.6	29.6	22.7	38.3
Average Total Precipitation (in.)	0.88	0.53	0.70	0.74	0.71	0.79	0.17	0.25	0.47	0.49	0.97	0.72	7.42
Average Total SnowFall (in.)	1.6	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.4	4.4
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record. Max. Temp.: 97% Min. Temp.: 95.8%  
 Precipitation: 96.2% Snowfall: 92.5% Snow Depth: 88.2%

### 3.9.3.3 Mountain Home, Idaho (106174)

Period of Record Monthly Climate Summary

Period of Record : 8/ 1/1948 to 7/31/2003

**Table 3.13 Climate records for Mountain Home, Idaho (Elmore County)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	38.2	45.1	53.7	63.1	72.8	83.0	93.0	91.5	80.9	67.3	50.0	39.3	64.8
Average Min. Temperature (F)	20.4	24.2	28.8	34.4	42.2	49.9	56.4	54.2	45.1	35.1	27.3	21.3	36.6
Average Total Precipitation (in.)	1.34	0.86	1.06	0.84	0.87	0.73	0.27	0.28	0.51	0.63	1.19	1.29	9.87
Average Total SnowFall (in.)	4.5	1.9	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.1	10.9
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record. Max. Temp.: 95.4% Min. Temp.: 95.5%  
 Precipitation: 96.2% Snowfall: 90.5% Snow Depth: 86%

### 3.9.3.4 Anderson Dam, Idaho (100282)

Period of Record Monthly Climate Summary

Period of Record : 8/ 1/1948 to 7/31/2003

**Table 3.14 Climate records for Anderson Dam, Idaho (Elmore County)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	34.6	39.8	47.1	59.5	70.2	79.5	91.0	88.8	78.3	65.2	47.0	37.5	61.5
Average Min. Temperature (F)	19.0	21.3	26.3	33.8	41.6	48.8	55.8	54.8	46.8	38.3	29.4	22.3	36.5
Average Total Precipitation (in.)	3.22	2.22	1.89	1.26	1.22	1.05	0.43	0.40	0.74	1.10	2.66	3.10	19.29
Average Total SnowFall (in.)	18.6	10.5	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	5.1	17.3	55.8
Average Snow Depth (in.)	10	10	5	0	0	0	0	0	0	0	1	5	3

Percent of possible observations for period of record. Max. Temp.: 88% Min. Temp.: 88.9%  
 Precipitation: 93.5% Snowfall: 95.3% Snow Depth: 94.7%

### 3.9.3.5 Glens Ferry, Idaho (103631)

Period of Record Monthly Climate Summary

Period of Record : 8/ 3/1948 to 7/31/2003

**Table 3.15 Climate records for Glens Ferry, Idaho (Elmore County)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	39.2	47.9	56.8	66.8	76.4	85.5	95.9	93.4	82.6	69.4	52.6	41.2	67.3
Average Min. Temperature (F)	20.3	24.9	29.1	34.9	42.7	50.0	55.4	52.5	43.5	33.4	27.2	21.7	36.3
Average Total Precipitation (in.)	1.47	0.98	0.87	0.68	0.82	0.68	0.20	0.26	0.42	0.55	1.24	1.26	9.43
Average Total SnowFall (in.)	5.1	1.5	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.4	11.8
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record. Max. Temp.: 89.8% Min. Temp.: 89.5%  
 Precipitation: 93.2% Snowfall: 90.7% Snow Depth: 87.6%

### 3.9.3.6 Hill City 1 W, Idaho (104268)

Period of Record Monthly Climate Summary

Period of Record : 1/ 1/1931 to 7/31/2003

**Table 3.16 Climate records for Hill City, Idaho (Camas County)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	28.7	33.2	40.3	53.8	65.4	73.7	85.4	84.7	74.8	61.8	42.9	31.7	56.4
Average Min. Temperature (F)	5.9	8.9	16.9	27.7	34.9	39.9	45.3	43.3	35.2	27.0	18.8	9.5	26.1
Average Total	2.29	1.59	1.27	1.00	1.16	0.96	0.36	0.36	0.57	0.94	1.71	2.20	14.42

**Table 3.16 Climate records for Hill City, Idaho (Camas County)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation (in.)													
Average Total	22.0	14.3	7.5	1.4	0.3	0.0	0.0	0.0	0.1	0.5	7.0	20.8	73.8
SnowFall (in.)													
Average Snow	16	16	12	2	0	0	0	0	0	0	2	8	5
Depth (in.)													

Percent of possible observations for period of record. Max. Temp.: 98.6% Min. Temp.: 98.9%  
 Precipitation: 98.8% Snowfall: 89% Snow Depth: 60.7%

### 3.10 Wildfire Hazard Profiles

#### 3.10.1 Wildfire Ignition Profile

Fire was once an integral function of the majority of ecosystems in Idaho. The seasonal cycling of fire across the landscape was as regular as the July, August and September lightning storms plying across the canyons and mountains. Depending on the plant community composition, structural configuration, and buildup of plant biomass, fire resulted from ignitions with varying intensities and extent across the landscape. Shorter return intervals between fire events often resulted in less dramatic changes in plant composition (Johnson 1998). The fires burned from 1 to 47 years apart, with most at 5- to 20-year intervals (Barrett 1979). With infrequent return intervals, plant communities tended to burn more severely and be replaced by vegetation different in composition, structure, and age (Johnson *et al.* 1994). Native plant communities in this region developed under the influence of fire, and adaptations to fire are evident at the species, community, and ecosystem levels. Fire history data (from fire scars and charcoal deposits) suggest fire has played an important role in shaping the vegetation in the Columbia Basin for thousands of years (Steele *et al.* 1986, Agee 1993).

Detailed records of fire ignition and extent have been compiled by the Bureau of Land Management in Boise. In addition, the Idaho Department of Lands keeps records of fire ignitions dating back to 1983. Using this data on past fire extents and fire ignition data, the occurrence of wildland fires in the region of Elmore County has been evaluated.

**Table 3.17 Sample fires Recorded by the BLM (Lower Snake) in the Rangeland areas of Elmore County (Southern half)**

Year	Fire Name	Acres	Year	Fire Name	Acres
2002	WILSON WELL	16	1985		377
2002	MP81 I84	33	1985		547
2002	DEAD FLAT	131	1985		644
2002	MP 75 I-84	145	1985		662
2002	CINDERCO	313	1985		805
2001	Trail Head	12	1985		826
2001	County Line	18	1985		937
2001	Billy Rio	27	1985		941
2001	BLANKSMA	74	1985		2,201
2001	Burnt Beet	101	1985		3,751
2001	Hog Farm	109	1985		5,728
2001	Canyon Ck2	128	1985		13,833
2001	Lockman Bt	131	1985		18,608

**Table 3.17 Sample fires Recorded by the BLM (Lower Snake) in the Rangeland areas of Elmore County (Southern half)**

Year	Fire Name	Acres	Year	Fire Name	Acres
2001	MP108 I84	195	1984		0
2001	MP75 I84	198	1984		2
2001	Strike 1	278	1984		5
2001	Canyon Ck	291	1984		11
2001	Dill	330	1984		15
2001	Sailor Ck	656	1984		17
2001	Chattin Hil	714	1984		17
2001	MP82 I84	894	1984		147
2001	Desert Duck	951	1984		186
2001	DEADMANFAL	991	1984		204
2001	Cold Spring	1,373	1984		224
2001	N SLATER	4,281	1984		241
2000	TIPANOOK	22	1984		300
2000	LTL GROUSE	26	1984		319
2000	ADAMORE	44	1984		320
2000	NORTHCINDR	64	1984		377
2000	MUD SPRING	124	1984		734
2000	SOUTCNDR	240	1984		881
2000	LONG TOM	246	1984		911
2000	Rattlesnake	262	1984		1,664
2000	Walker	363	1984		1,664
2000	IMMIGRANT	364	1984		1,749
2000	MP77 I84	1,544	1984		1,925
2000	I84 MP78	2,544	1984		1,955
2000	OREGONTRAIL	30,651	1984		2,013
1999		22	1984		2,086
1999		24	1984		2,101
1999		42	1984		3,294
1999		64	1984		3,888
1999		83	1984		3,888
1999		126	1984		4,639
1999		141	1984		5,618
1999		231	1984		7,039
1999		256	1984		8,257
1999		362	1984		8,785
1999		392	1984		21,528
1999		511	1984		21,812
1999		1,100	1983		5
1999		35,041	1983		9
1998	CROWNSYRUP	14	1983		134
1998	PILGRIM GL	44	1983		149
1998	FLINT MESA	53	1983		194
1998	SUGARBOWL	102	1983		230

**Table 3.17 Sample fires Recorded by the BLM (Lower Snake) in the Rangeland areas of Elmore County (Southern half)**

Year	Fire Name	Acres	Year	Fire Name	Acres
1998	SIPHON	257	1983		245
1998	FEEDLOT	261	1983		369
1997		31	1983		397
1997		35	1983		418
1997		45	1983		433
1997		59	1983		538
1997		73	1983		622
1997		87	1983		834
1997		91	1983		834
1997		121	1983		953
1997		169	1983		983
1997		183	1983		1,054
1997		218	1983		2,222
1997		252	1983		2,613
1997		1,044	1983		3,164
1997		1,110	1983		5,966
1996		46	1983		7,362
1996		78	1983		7,796
1996		80	1983		13,946
1996		103	1983		16,287
1996		127	1983		16,934
1996	BLACKSANDS	195	1982		171
1996		262	1982		192
1996		341	1982		309
1996		350	1982		324
1996		401	1982		339
1996		448	1982		381
1996		564	1982		428
1996		639	1982		460
1996		651	1982		678
1996		687	1982		704
1996		965	1982		1,233
1996		1,029	1982		1,393
1996		1,408	1982		1,516
1996		1,840	1982		1,534
1996		1,885	1982		1,991
1996		2,380	1982		2,083
1996		2,742	1982		2,450
1996		2,931	1982		4,931
1996		22,843	1981		100
1995		0	1981		183
1995		1	1981		198
1995		2	1981		241

**Table 3.17 Sample fires Recorded by the BLM (Lower Snake) in the Rangeland areas of Elmore County (Southern half)**

Year	Fire Name	Acres	Year	Fire Name	Acres
1995		35	1981		290
1995		59	1981		359
1995		100	1981		361
1995		106	1981		485
1995		109	1981		709
1995		121	1981		943
1995		151	1981		1,664
1995		198	1981		2,814
1995		264	1981		3,390
1995		361	1981		3,830
1995		386	1981		4,185
1995		423	1981		4,495
1995		440	1981		5,770
1995		549	1981		13,223
1995		1,323	1980		219
1995		1,348	1980		224
1995		3,245	1980		288
1995		30,796	1980		302
1994		34	1980		369
1994		443	1980		803
1994		443	1980		1,592
1993		84	1980		2,866
1993		275	1980		15,850
1993		2,935	1979	SAILOR CREEK	2,195
1992		72	1979	ROSEVEAR GULCH	13,061
1992		81	1977	FLAT LAND	167
1992		88	1977	SPRING SHORES	271
1992		210	1977	FLYING H	292
1992		219	1977	NORTH BENNETT ROAD	634
1992		232	1977	SOUTH REVERSE	2,381
1992		433	1976	ROSEVEAR GULCH	261
1992		782	1976	SAND BANK	277
1992		901	1976	ROSEVEAR #2	289
1992		1,331	1976	REVERSE	449
1992		1,687	1976	RYE GRASS	880
1992	GROUSE CK	4,266	1976	DANSKIN	882
1992	FOOTHILLS	127,936	1976	RATTLESNAKE	1,993
1991		77	1976	COLD SPRINGS	2,606
1991		166	1976	BROWNS CREEK	146,973
1991		168	1975	MEDBURY	165
1991		1,139	1975	MICROWAVE	242
1990		129	1975	BLACKS CREEK	315
1990		141	1975	EAST LOCKMAN	421

**Table 3.17 Sample fires Recorded by the BLM (Lower Snake) in the Rangeland areas of Elmore County (Southern half)**

Year	Fire Name	Acres	Year	Fire Name	Acres
1990		223	1975	BENS FIRE	602
1990		249	1975	OMNI	653
1989		50	1975	BENNETT ROAD	880
1989		53	1975	AIR BASE	1,512
1989		70	1975	SOUTH HAMMETT	1,669
1989		86	1975	SOLDIER CAP	2,298
1989		90	1975	SAYLOR CREEK	2,867
1989		96	1975	CANYON CREEK	3,879
1989		165	1975	NORTH HAMMETT	6,275
1989		175	1974	BULTACO	160
1989		302	1974	REVERSE	286
1989		312	1974	POT HOLE	3,933
1989		484	1974	JUMPER	4,825
1989		1,026	1974	HOT SPRING RESERVOIR	9,632
1989		1,455	1973	DEADMAN CREEK	92
1989	TEAPOT	4,152	1973	GLENNS FERRY DUMP	116
1989		5,770	1973	BLACK MESA ROAD	176
1989		7,327	1973	JACK RABBIT	322
1988		62	1973	BLACK MESA	416
1988		281	1973	BENNETT CREEK #2	497
1988		4,746	1973	MEDBERRY HILL	756
1987		8	1973	ALKALI CREEK	977
1987		56	1973	DEADMAN	1,477
1987		93	1973	BLACK HILL	1,506
1987	SUGAR BOWL	121	1973	ALKALI CREEK #2	2,491
1987		130	1972	KING HILL CANAL	210
1987		137	1972	SOUTH SIDE	258
1987		155	1972	CASSIA GULCH	318
1987		224	1972	REVERSE	356
1987		316	1972	CLOVER HOLLOW	362
1987	DITCH	405	1972	RATTLESNAKE SPRINGS	565
1987	EAST CANAL	506	1972	CRANE FALLS	2,599
1987	CHARCOAL	540	1971	BRUNEAU BRIDGE	18
1987	CINDER CONE	643	1971	FORWARD	66
1987	SIMCO	691	1971	GLENNS FERRY	128
1987	DIVISION	736	1971	DEAD MAN CREEK	238
1987		812	1971	BENNETT CREEK	276
1987		953	1971	RATTLESNAKE SPRINGS	289
1987		1,593	1971	COLD SPRINGS CREEK	641
1987		2,190	1971	GRINDSTONE ANNEX	756
1987		2,709	1971	DEADMAN GULCH	1,130
1987		5,496	1971	CHEATGRASS	6,077
1987		7,730	1971	CHEAT GRASS #2	8,690



**Table 3.17 Sample fires Recorded by the BLM (Lower Snake) in the Rangeland areas of Elmore County (Southern half)**

Year	Fire Name	Acres	Year	Fire Name	Acres
1987		62,880	1970	POTHOLE #1	172
1986		6	1970	POTHOLE #2	421
1986		34	1969	JOB CORP	1,297
1986	BELL RAPIDS	44	1967	TOLLGATE	1,812
1986		48	1966	MEDBURY HILL	185
1986	BRIDGE	98	1966	CHOO CHOO	652
1986		102	1966	CRATER RINGS	3,648
1986		110	1965	HILL CITY	1,883
1986		111	1964	GRINDSTONE	569
1986		162	1964	TOLLGATE	749
1986		184	1964	RIMROCK	984
1986		214	1964	KING HILL CREEK	3,283
1986	RAILROAD MILEPOST 394	223	1964	CRATER STATION	5,873
1986		237	1963	COYOTE POINT	400
1986		257	1963	SOUTH CANYON CREEK	10,389
1986		270	1960	HAMMETT	612
1986		307	1960	LOWER CANYON CREEK	3,342
1986		310	1960	UPPER CANYON CREEK	10,335
1986	SOLES REST	328	1959	WILLOW CREEK	199
1986		375	1959	MOUNTAIN HOME RESERVOIR	251
1986		414	1959	HAMMETT POWER LINE	252
1986	RR MILEPOST 394 #2	434	1959	OLD HIGHWAY	278
1986		498	1959	HIGHWAY 22	900
1986		592	1959	WOODTICK	925
1986		746	1959	WOODTICK	925
1986		1,008	1959	HOT CREEK	2,854
1986		1,044	1959	MAYFIELD	3,505
1986	RAILROAD MILEPOST 390.99	1,622	1959	CINDER CONE	7,523
1986	RAILROAD MILEPOST 393	1,755	1959	DITTO CREEK	7,610
1986		1,894	1958	MEDBURY HILL	505
1986		1,923	1958	MUELER	582
1986		2,142	1958	RAILROAD	1,165
1986	HOG FARM	2,500	1958	NORTH CRATER STATION	2,761
1986		8,653	1958	BUCK BRUSH	2,958
1986		12,069	1958	GROFESMA	3,868
1986		18,349	1958	BADGER	4,713
1985		1	1958	REVERSE #1	5,377
1985		12	1958	SQUAW CREEK	7,360
1985		58	1958	CINDER CONE	10,151
1985		68	1957	BRUNEAU ROAD	58
1985		82	1957	SUB STATION	64
1985		87	1957	HYDE	668
1985		91	1957	CLEFT	2,690

**Table 3.17 Sample fires Recorded by the BLM (Lower Snake) in the Rangeland areas of Elmore County (Southern half)**

Year	Fire Name	Acres	Year	Fire Name	Acres
1985		107	1957	RATTLESNAKE CREEK	3,581
1985		126	1957	INDIAN COVE	3,928
1985		309	1957	ROSEVEAR	18,346
1985		324	1957	BEACON INN	22,621
1985		326	1957	GEISLER	25,286
<b>Average Fire Size in this area</b>		<b>2,705</b>			

**Table 3.18 Sample Fires Recorded by the BLM (Upper Snake West Zone) in the Rangeland areas of Elmore County (southeastern area near Camas & Gooding Counties)**

Year	Fire Name	Latitude	Longitude	Acres
2002	I84MM129	42.9769	115.1067	69
2000	RRMM362.5			31
2000	RRMM359			34
2000	BELL MARE			9,603
1999	RRMP364.8			57
1999	UPRRMP359			162
1999	Kings Crown			2,157
1998	Goat			564
1997	Calf Creek	43.0670	114.9670	1,637
1996	King Hill	42.9830	115.1670	14
1996	Ticeska N	42.9330	115.1170	130
1995	Presley	43.0170	115.2330	33
1995	Wildhorse	43.3330	115.1670	169
1995	Swiss Valley	42.9000	115.1500	2,654
1994	RR MP358S	42.9330	115.1000	8
1994	RR MP359S	42.9330	115.1170	12
1994	RR MP361S	42.9330	115.1500	45
1993	Hill City NW	43.3170	115.1500	857
1991	Deer Haven	43.2170	115.1830	882
1989	RR MP365	42.9830	115.1670	7
1989	Bridge 2	42.9500	115.1500	11
1989	Bridge	42.9670	115.1670	26
1989	RR MP364	42.9670	115.1500	109
1988	US20 MP131S	43.3170	115.1670	48
1988	Dempsey	43.1670	115.1500	659
1987	Deer Haven	43.2000	115.2170	1,130
1986	RR MP364E	42.9670	115.1500	137
1986	RR MP357S	42.9330	115.0830	1,088
1984	RR MP360N	42.5600	115.0800	12
1983	Watermelon	42.5900	115.1000	18
1983	Pioneer	42.5900	115.0500	452
1982	RR MP363.5	42.8000	115.1670	55

**Table 3.18 Sample Fires Recorded by the BLM (Upper Snake West Zone) in the Rangeland areas of Elmore County (southeastern area near Camas & Gooding Counties)**

Year	Fire Name	Latitude	Longitude	Acres
1982	RR MP364.5	42.8170	115.1670	188
1981	RR MP364	42.9670	115.1670	67
1981	RR MP364 2	42.9670	115.1670	765
1980	Watermelon	42.9670	115.1500	115
1980	Hat Spring	43.0670	115.1330	207
1979	RR MP363.5	42.9670	115.1670	62
1979	RR MP364	42.9670	115.1670	768
1978	RR MP364	42.9830	115.1670	27
1978	Wild Horse	43.3500	115.1670	28
1977	Boise	43.0830	115.1830	556
1976	Gravel	42.9330	115.1330	12
1976	Kings Crown	43.0330	115.2500	12
1976	Kast	42.9830	115.1500	51
1976	Bancroft	42.8330	115.2500	286
1975	Gopher	42.9500	115.1500	7
1975	Pasture	42.9830	115.1670	29
1975	Melon	42.9670	115.1670	67
1973	King Hill	42.9170	115.0830	7
1973	Pasture	42.9670	115.1830	110
1973	West Dry Creek	43.0000	115.0670	168
1973	Bliss Dam	42.9000	115.0670	738
1973	Ticeska	42.7670	115.1330	749
1973	Bliss Dam 2	42.9170	115.1170	1,155
1973	Snake 1	42.9170	115.1330	1,177
1971	King Hill East 1			35
1971	Ticeska			264
1971	Pioneer Reservoir South			280
1971	State South 1			358
1971	Bancroft East 1			581
1970	King Hill Southeast			21
<b>Average Fire Size in this area</b>				<b>512</b>

**Table 3.19 Sample Fires Recorded by the Boise National Forest in the Forestland and Rangeland areas of Elmore County (northern areas, central and western side).**

1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year	1 <sup>st</sup> Name	2 <sup>nd</sup> Name	3 <sup>rd</sup> Name	4 <sup>th</sup> Name	5 <sup>th</sup> Name	Acres
2000	0	0	0	0	Trail Creek					3
2000	0	0	0	0	Trail Creek					31
2000	0	0	0	0	Trail Creek					33,177
1995	0	0	0	0	Whiskey					1

**Table 3.19 Sample Fires Recorded by the Boise National Forest in the Forestland and Rangeland areas of Elmore County (northern areas, central and western side).**

1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year	1 <sup>st</sup> Name	2 <sup>nd</sup> Name	3 <sup>rd</sup> Name	4 <sup>th</sup> Name	5 <sup>th</sup> Name	Acres
1995	0	0	0	0	Whiskey					647
1994	0	0	0	0	Rabbit Creek					147,96 2
1992	1992	0	0	0		Foothills				65
1992	0	0	0	0	Foothills					234
1992	0	0	0	0	Foothills					6,207
1992	0	0	0	0	Foothills					101
1992	0	0	0	0	Foothills					138,07 1
1992	0	0	0	0						736
1990	0	0	0	0						1,101
1990	0	0	0	0						547
1987	1992	0	0	0		Foothills				212
1986	1992	0	0	0		Foothills				35
1986	0	0	0	0						71
1986	0	0	0	0						53
1986	0	0	0	0						51
1986	0	0	0	0						2,513
1958	1992	0	0	0		Foothills				587
1958	1992	0	0	0		Foothills				1,669
1958	0	0	0	0						1,729
1953	1994	0	0	0		Rabbit Creek				631
1952	0	0	0	0						1,218
1949	0	0	0	0						950
1948	1992	1992	0	0						1,271
1948	1992	0	0	0		Foothills				314
1948	1992	0	0	0		Foothills				1,073
1948	0	0	0	0						746
1948	0	0	0	0						9,588
1947	0	0	0	0						1,840
1945	1992	0	0	0		Foothills				389
1945	1992	0	0	0		Foothills				4,434
1945	1986	1992	0	0			Foothills			44
1945	1986	1992	0	0			Foothills			3,809
1945	1986	0	0	0						339
1945	1986	0	0	0						24
1945	1986	0	0	0						178
1945	0	0	0	0						1,011
1944	1992	0	0	0		Foothills				738
1943	1992	0	0	0		Foothills				762
1943	1992	0	0	0		Foothills				968
1942	1992	0	0	0		Foothills				63

**Table 3.19 Sample Fires Recorded by the Boise National Forest in the Forestland and Rangeland areas of Elmore County (northern areas, central and western side).**

1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year	1 <sup>st</sup> Name	2 <sup>nd</sup> Name	3 <sup>rd</sup> Name	4 <sup>th</sup> Name	5 <sup>th</sup> Name	Acres
1942	1992	0	0	0		Foothills				117
1942	1992	0	0	0		Foothills				21
1942	1992	0	0	0		Foothills				1,199
1942	1992	0	0	0		Foothills				8,321
1942	1986	1992	0	0			Foothills			289
1942	1958	1992	0	0			Foothills			96
1942	0	0	0	0						1,664
1942	0	0	0	0						557
1935	0	0	0	0						5,551
1934	0	0	0	0						1,314
1930	0	0	0	0						451
1929	0	0	0	0						300
1926	1992	0	0	0		Foothills				535
1926	1992	0	0	0		Foothills				21,600
1926	1992	0	0	0		Foothills				1,884
1926	1992	0	0	0		Not Foothill				3,115
1926	1992	0	0	0		Foothills				36
1926	1992	0	0	0		Foothills				12,993
1926	1992	0	0	0		Foothills				430
1926	1986	1992	0	0						4,790
1926	1986	0	0	0						69
1926	1986	0	0	0						3,216
1926	1986	0	0	0						789
1926	1960	1986	0	0						318
1926	1960	1986	1992	0				Foothills		117
1926	1960	1986	0	0						131
1926	1948	1992	0	0						288
1926	1945	1992	0	0			Foothills			529
1926	1945	1986	1992	0						1,744
1926	1945	1986	1992	0				Foothills		162
1926	1945	0	0	0						1,616
1926	1943	1992	0	0			Foothills			4,213
1926	1942	1992	0	0			Foothills			4,999
1926	1942	1992	0	0			Foothills			6,999
1926	1942	1986	0	0						221
1926	1942	1986	0	0						1,012
1926	1942	1986	0	0						213
1926	1942	1986	0	0						2,940
1926	1942	1986	1992	0				Foothills		3,695
1926	1935	0	0	0						387

**Table 3.19 Sample Fires Recorded by the Boise National Forest in the Forestland and Rangeland areas of Elmore County (northern areas, central and western side).**

1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year	1 <sup>st</sup> Name	2 <sup>nd</sup> Name	3 <sup>rd</sup> Name	4 <sup>th</sup> Name	5 <sup>th</sup> Name	Acres
1926	0	0	0	0						3,511
1926	0	0	0	0						268
1926	0	0	0	0						19,950
1926	0	0	0	0						2,922
1920	1992	0	0	0		Foothills				509
1915	1942	1992	0	0			Foothills			264
1915	1926	1942	1986	1992					Foothills	748
1915	1926	1942	1992	0				Foothills		224
<b>Average Fire Size in this area</b>										<b>5,364</b>

**Table 3.20 Sample Fires Recorded by the Sawtooth National Forest in the Forestland and Rangeland areas of Elmore County (west-central areas).**

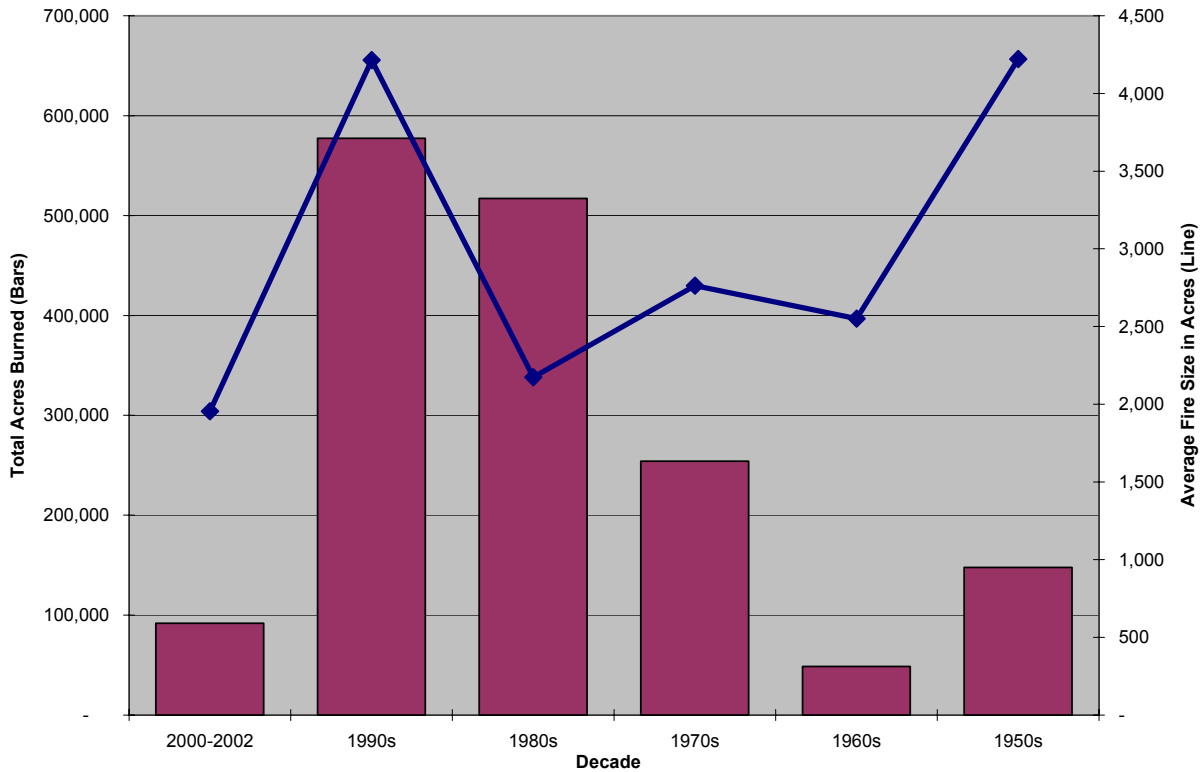
1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Acres
2000		4
2000		32
1998		258
1992		1,492
1990		42
1990		43
1989	1994	5
1989		2,246
1986		197
1975	1964	62
1975		1
1964		2,285
1961		156
1960		26
<b>Average Fire Size in this area</b>		<b>489</b>

Many fires have burned in the region of Elmore County (Tables 3.17-3.20). Figure 3.1 summarizes large fires by decade. The total number of large fires in Elmore County peaked in the 1980's when approximately 238 large fires burned over 517,000 acres (Figure 3.1). However, in the 1990's 137 recorded large fires burned approximately 577,300 acres (Figure 3.1). It should be noted that in some cases, fires revisited the same parcel of ground more than one time in a decade, and between decades. That is why the total number of acres burned in the county is so large during some decades.

The average number of acres burned each decade since the 1950s has been approximately 309,000 acres. The first three years of the new millennium has burned almost 92,000 acres,

which is on par with a 10 year total of 306,000 acres, nearly equivalent to the second half of last century's average. However, the average fire size during the 2000-2003 period has been significantly lower than the 1950-1999 average. The 10 year average over the 1950-1999 period burned approximately 3,185 acres per fire, while the 2000-2003 average fire size has been  $\frac{2}{3}$  that size at 1,955 acres. It is still too early in the decade to make prognostications about changes in fire size, however, if this trend continues it points to more fires, but smaller fires on average (Figure 3.1).

**Figure 3.1. Elmore County Post WWII Wildfire Profile**



Since World War II, it would appear that roughly 65% of all fires in the County have been ignited by nature, while the remaining 35%, on average have been human caused. Although the 2000 decade only has 3 years worth of data, an extrapolation of these numbers would indicate that it is matching the pace of ignitions from the 1990s.

**Table 3.21 Wildfire Ignitions by Cause in Elmore County by cause.**

1948-2002 <sup>1</sup>			
Cause	Cause Reference	Occurrence	Percent
Lightning	1	2042	60.0%
Campfire	2	90	2.6%
Smoking	3	298	8.8%
Debris Burning	4	574	16.9%
Arson	5	83	2.4%
Equipment Use	6	7	0.2%

**Table 3.21 Wildfire Ignitions by Cause in Elmore County by cause.**

1948-2002 <sup>1</sup>			
Cause	Cause Reference	Occurrence	Percent
Railroad	7	105	3.1%
Children	8	41	1.2%
Miscellaneous	9	162	4.8%
<b>Total</b>		<b>3,402</b>	

<sup>1</sup> Data from 1948-2002 was provided by the BLM and US Forest Service.

### 3.10.2 Wildfire Extent Profile

Across the west, wildfires have been increasing in extent and cost of control. The National Interagency Fire Center (2003) reports nearly 88,500 wildfires in 2002 burned a total of nearly 7 million acres and cost \$1.6 billion (Table 3.22). By most informed accounts, the 2003 totals will be significantly higher in terms of acres burned and cost.

**Table 3.22. National Fire Season 2002 Summary**

Number of Fires (2002 final)	88,458
10-year Average (1992-2001)	103,112
Acres Burned (2002 final)	<b>* 6,937,584</b>
10-year Average (1992-2001)	4,215,089
Structures Burned (835 primary residences, 46 Commercial buildings, 1500 outbuildings)	2,381
Estimated Cost of Fire Suppression (Federal agencies only)	\$ 1.6 billion

- *This figure differs from the 7,184,712 acres burned estimate provided by the National Interagency Coordination Center (NICC). The NICC estimate is based on information contained in geographic area and incident situation reports prepared at the time fires occurred. The 6,937,584 estimate is based on agency end-of-year reports.*

The National Interagency Fire Center, located in Boise, Idaho, maintains records of fire costs, extent, and related data for the entire nation. Tables 3.23 and 3.24 summarize some of the relevant wildland fire data for the nation, and some trends that are likely to continue into the future unless targeted fire mitigation efforts are implemented and maintained in areas like Elmore County.



**Table 3.23. Total Fires and Acres 1960 - 2002 Nationally**

These figures are based on end-of-year reports compiled by all wildland fire agencies after each fire season, and are updated by March of each year. The agencies include: Bureau of Land Management, Bureau of Indian Affairs, National Park Service, US Fish and Wildlife Service, USDA Forest Service and all State Lands.

Year	Fires	Acres	Year	Fires	Acres
2002	88,458	* 6,937,584	1980	234,892	5,260,825
2001	84,079	3,555,138	1979	163,196	2,986,826
2000	122,827	8,422,237	1978	218,842	3,910,913
1999	93,702	5,661,976	1977	173,998	3,152,644
1998	81,043	2,329,709	1976	241,699	5,109,926
1997	89,517	3,672,616	1975	134,872	1,791,327
1996	115,025	6,701,390	1974	145,868	2,879,095
1995	130,019	2,315,730	1973	117,957	1,915,273
1994	114,049	4,724,014	1972	124,554	2,641,166
1993	97,031	2,310,420	1971	108,398	4,278,472
1992	103,830	2,457,665	1970	121,736	3,278,565
1991	116,953	2,237,714	1969	113,351	6,689,081
1990	122,763	5,452,874	1968	125,371	4,231,996
1989	121,714	3,261,732	1967	125,025	4,658,586
1988	154,573	7,398,889	1966	122,500	4,574,389
1987	143,877	4,152,575	1965	113,684	2,652,112
1986	139,980	3,308,133	1964	116,358	4,197,309
1985	133,840	4,434,748	1963	164,183	7,120,768
1984	118,636	2,266,134	1962	115,345	4,078,894
1983	161,649	5,080,553	1961	98,517	3,036,219
1982	174,755	2,382,036	1960	103,387	4,478,188
1981	249,370	4,814,206			

(National Interagency Fire Center 2003)

**Table 3.24 Suppression Costs for Federal Agencies Nationally**

Year	Bureau of Land Management	Bureau of Indian Affairs	Fish and Wildlife Service	National Park Service	USDA Forest Service	Totals
1994	\$98,417,000	\$49,202,000	\$3,281,000	\$16,362,000	\$678,000,000	<b>\$845,262,000</b>
1995	\$56,600,000	\$36,219,000	\$1,675,000	\$21,256,000	\$224,300,000	<b>\$340,050,000</b>
1996	\$96,854,000	\$40,779,000	\$2,600	\$19,832,000	\$521,700,000	<b>\$679,167,600</b>
1997	\$62,470,000	\$30,916,000	\$2,000	\$6,844,000	\$155,768,000	<b>\$256,000,000</b>
1998	\$63,177,000	\$27,366,000	\$3,800,000	\$19,183,000	\$215,000,000	<b>\$328,526,000</b>
1999	\$85,724,000	\$42,183,000	\$4,500,000	\$30,061,000	\$361,000,000	<b>\$523,468,000</b>
2000	\$180,567,000	\$93,042,000	\$9,417,000	\$53,341,000	\$1,026,000,000	<b>\$1,362,367,000</b>
2001	\$192,115,00	\$63,200,000	\$7,160,000	\$48,092,000	\$607,233,000	<b>\$917,800,000</b>
2002	\$204,666,000	\$109,035,000	\$15,245,000	\$66,094,000	\$1,266,274,000	<b>\$1,661,314,000</b>

(National Interagency Fire Center 2003)

Although many very large fires, growing to over 250,000 acres have burned in Southwestern Idaho, which Elmore County is a part, actual fires in this county have usually been controlled at much smaller extents. This is not to imply that wildfires are not a concern in this county, but to point to the aggressive and professional manner to which the wildland and rural fire districts cooperate in controlling these blazes. The Boise National Forest and the Sawtooth National Forest provide primary wildfire protection in the northern sections of Elmore County. The BLM Lower Snake River District and the Upper Snake River District provide primary wildland fire protection to the southern sections of Elmore County. Five rural fire districts augment these services with home protection and related services.

Data on large fire events that burned within Elmore County have been summarized (Figure 3.1). While some of these fires were centered outside of Elmore County, all of the listed fires burned within the geographical extent of the county. On average, wildfires in Elmore County which exceed 100 acres, reach a size of 635 acres.

### **3.11 Analysis Tools and Techniques to Assess Fire Risk**

Elmore County and the adjacent counties of Ada, Canyon, and Boise Counties, were analyzed using a variety of techniques, managed on a GIS system (ArcGIS 8.2). Physical features of the region were represented by data layers including roads, streams, soils, elevation, and remotely sensed images from the Landsat 7 ETM+ satellite. Field visits were conducted by specialists from Northwest Management, Inc., and others. Discussions with area residents and fire control specialists augmented field visits and provided insights to forest health issues and treatment options.

This information was analyzed and combined to develop an assessment of wildland fire risk in the region.

### 3.11.1 Fire Prone Landscapes

Schlosser *et al.* 2002, developed a methodology to assess the location of fire prone landscapes on forested and non-forested ecosystems in the western US. Working under an agreement with the Clearwater Resource Conservation and Development Council, Inc., (RC&D), Northwest Management, Inc., a natural resources consulting firm, completed a similar assessment for five counties in the north central Idaho area including Clearwater County, Idaho County, Latah County, Lewis County, and Nez Perce County. In a separate project, also funded by the Bureau of Land Management working in cooperation with Adams, Gem, Payette, Washington, and Valley Counties, through the West Central Highlands RC&D Area, Northwest Management, Inc., completed a Fire Prone Landscapes assessments on those listed areas. This assessment of Fire Prone Landscapes was completed simultaneously for Ada, Boise, Canyon, and Elmore County, working in cooperation with the Southwestern Idaho RC&D located in Meridian.

The goal of developing the Fire Prone Landscapes analysis is to make inferences about the relative risk factors across large geographical regions (multiple counties) for wildfire spread. This analysis uses the extent and occurrence of past fires as an indicator of characteristics for a specific area and their propensity to burn in the future. Concisely, if a certain combination of vegetation cover type, canopy closure, aspect, slope, stream and road density have burned with a high occurrence and frequently in the past, then it is reasonable to extrapolate that they will have the same tendency in the future, unless mitigation activities are conducted to reduce this potential.

The analysis for determining those landscapes prone to wildfire utilized a variety of sources.

**Digital Elevation:** Digital elevation models (DEM) for the project used USGS 10 meter DEM data provided at quarter-quadrangle extents. These were merged together to create a continuous elevation model of the analysis area. Elevations were reported in meters in the source files and converted to feet using the relationship of 1 Meter = 3.28084 Feet.

The merged DEM file was used to create two derivative data layers; aspect and slope. Both were created using the spatial analyst extension in ArcGIS 8.2. Aspect data values retained one decimal point accuracy representing the cardinal direction of direct solar radiation, represented in degrees. Slope was recorded in percent and also retained one decimal point accuracy.

**Remotely Sensed Images:** Landsat 7 Enhanced Thematic Mapper (ETM+) images were used to assess plant cover information and percent of canopy cover. The Landsat ETM+ instrument is an eight-band multi-spectral scanning radiometer capable of providing high-resolution image information of the Earth's surface. It detects spectrally-filtered radiation at visible, near-infrared, short-wave, and thermal infrared frequency bands from the sun-lit Earth. Nominal ground sample distances or "pixel" sizes are 15 meters in the panchromatic band; 30 meters in the 6 visible, near and short-wave infrared bands; and 60 meters in the thermal infrared band.

The satellite orbits the Earth at an altitude of approximately 705 kilometers with a sun-synchronous 98-degree inclination and a descending equatorial crossing time of 10 a.m. daily.

Image spectrometry has great application for monitoring vegetation and biophysical characteristics. Vegetation reflectance often contains information on the vegetation chlorophyll absorption bands in the visible region and the near infrared region. Plant water absorption is easily identified in the middle infrared bands. In addition, exposed soil, rock, and non-vegetative surfaces are easily separated from vegetation through standard hyper-spectral analysis procedures.

Two Landsat 7 ETM images were obtained to conduct hyper-spectral analysis for this project. The first was obtained in 1998 and the second in 2002. Hyper-spectral analysis procedures

followed the conventions used by the Idaho Vegetation and Land Cover Classification System, modified from Redmond (1997) and Homer (1998).

**Riparian Zones:** Riparian zones were derived from stream layers created during the Interior Columbia Basin Ecosystem Management Project (Quigley *et al.* 2001).

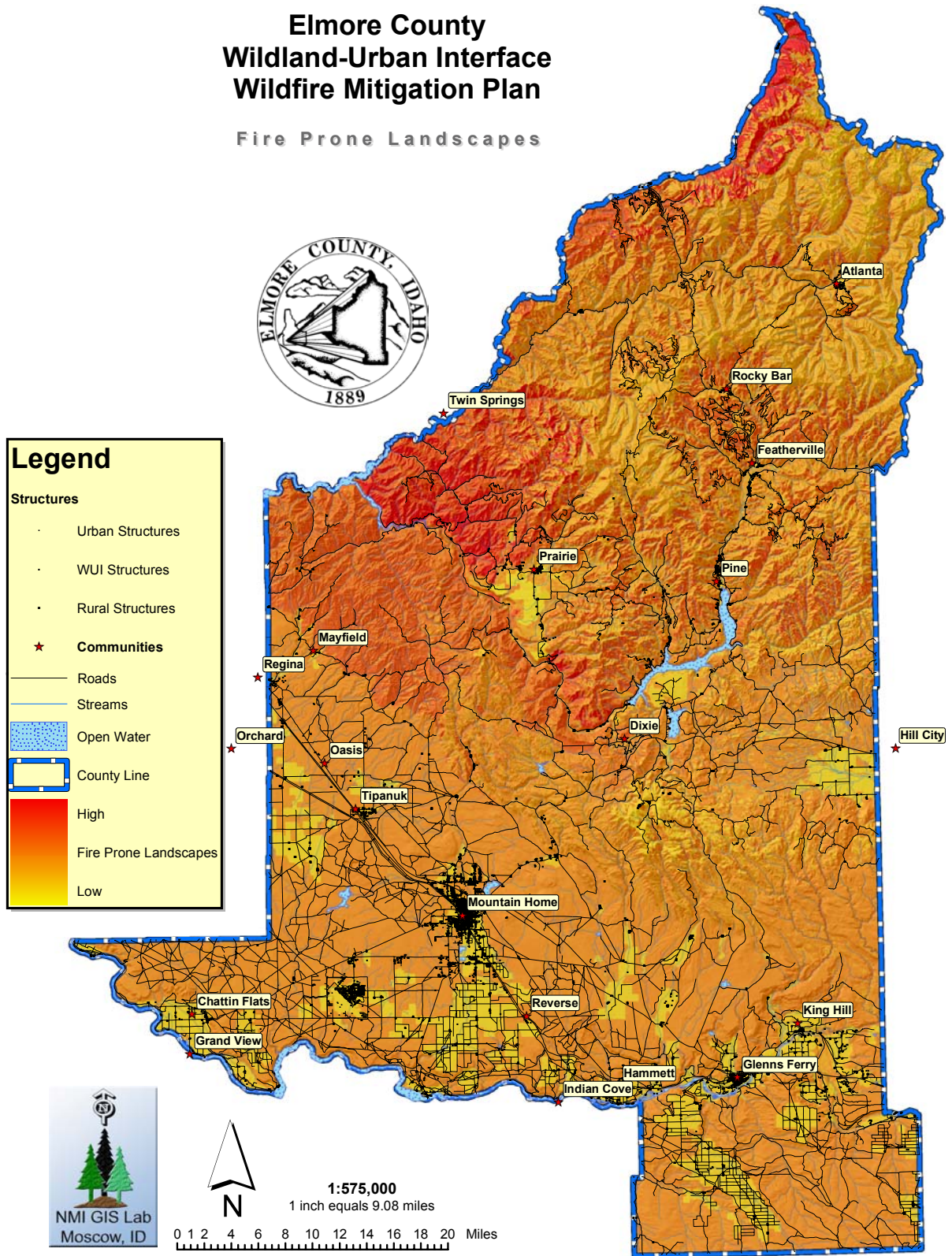
**Wind Direction:** Wind direction and speed data detailed by monthly averages was used in this project to better ascertain certain fire behavior characteristics common to large fire events. These data are spatially gridded Average Monthly Wind Directions in Idaho. The coverage was created from data summarized from the Interior Columbia Basin Ecosystem Management Project (Quigley *et al.* 2001).

**Past Fires:** Past fire extents represent those locations on the landscape that have previously burned during a wildfire. Past fire extent maps were obtained from a variety of sources for the central Idaho area including the USFS Boise National Forest and the Lower Snake River B.L.M..

**Fire Prone Landscapes:** Using the methodology developed by Schlosser *et al.* (2002), and refined for this project, the factors detailed above were used to assess the potential for the landscape to burn during the fire season in the case of fire ignition. Specifically, the entire region was evaluated at a resolution of 10 meters (meaning each pixel on the screen represented a 10 meter square on the ground) to determine the propensity for a particular area (pixel) to burn in the case of a wildfire. The analysis involved creating a linear regression analysis within the GIS program structure to assign a value to each significant variable, pixel-by-pixel. The analysis ranked factors from 0 (little to no risk) to 100 (extremely high risk) based on past fire occurrence. In fact, the maximum rating score for rangelands was 88, while a few acres of forestland ranked as high as 99.

# Elmore County Wildland-Urban Interface Wildfire Mitigation Plan


## Fire Prone Landscapes



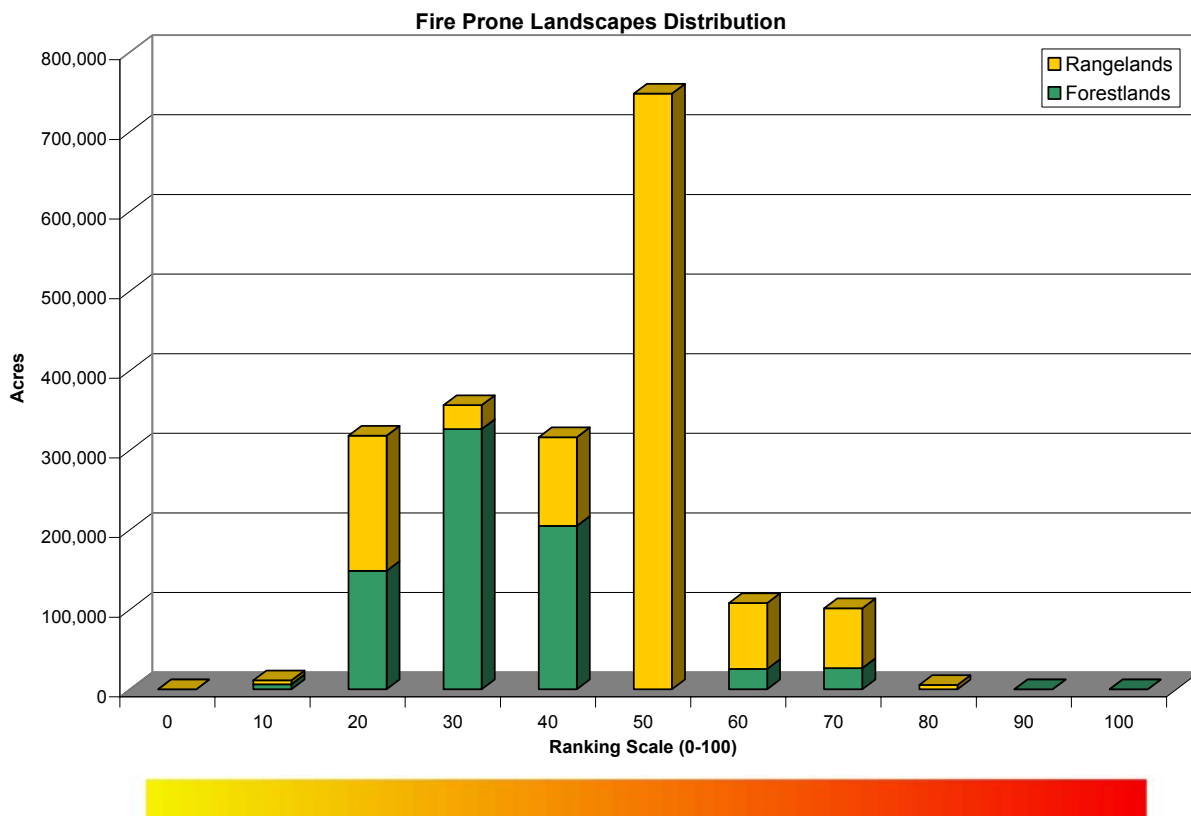
*This map is presented for reference in this section of the plan. This map, and additional maps are detailed in Appendix I.*

The maps depicting these risk categories display yellow as the lowest risk and red as the highest with values between a constant gradient from yellow to orange to red (Table 3.25). While large maps (12 square feet) have been provided as part of this analysis, smaller size maps are presented in Appendix I.

**Table 3.25. Fire Prone Landscape rankings and associated acres in each category for Elmore County.**

Color Code	Acres			Percent of Total Area	
	Value	Forestlands	Rangelands		
	0	50	--	50	0%
	10	6,383	4,936	11,319	1%
	20	148,835	169,801	318,636	16%
	30	326,791	30,339	357,130	18%
	40	205,233	111,396	316,629	16%
	50	39	748,421	748,460	38%
	60	25,478	83,105	108,583	6%
	70	26,756	75,124	101,880	5%
	80	--	5,660	5,660	0%
	90	--	--	-	0%
	100	--	--	-	0%
<b>Total</b>			<b>361,792</b>		

**Figure 3.2: Distribution of area by Fire Prone Landscape Class.**



The risk category values developed in this analysis should be considered **ordinal data**, that is, while the values presented have a meaningful ranking, they neither have a true zero point nor scale between numbers. Rating in the “40” range is not necessarily twice as “risky” as rating in the “20” range. These category values also do not correspond to a rate of fire spread, a fuel loading indicator, or measurable potential fire intensity. Each of those scales is greatly influenced by weather, seasonal and daily variations in moisture (relative humidity), solar radiation, and other factors. The risk rating presented here serves to identify where certain constant variables are present, aiding in identifying where fires typically spread into the largest fires across the landscape.

### 3.11.2 Fire Regime Condition Class

The US Forest Service has provided their assessment of Fire Regime Condition Class for the forested areas of Elmore County to this WUI Fire Mitigation Plan analysis. These measures of forest conditions are the standard method of analysis for the USDA Forest Service.

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

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

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

A fire regime condition class (FRCC) is a classification of the amount of departure from the natural regime (Hann and Bunnell 2001). Coarse-scale FRCC classes have been defined and mapped by Hardy *et al.* (2001) and Schmidt *et al.* (2001) (FRCC). They include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g. insect and diseased mortality, grazing, and drought). There are no wildland vegetation and fuel conditions or wildland fire situations that do not fit within one of the three classes.

The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural (historical) regime (Hann and Bunnell 2001,

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

Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural (historical) fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural (historical) fire regime, such as invasive species (e.g. weeds, insects, and diseases), “high graded” forest composition and structure (e.g. large trees removed in a frequent surface fire regime), or repeated annual grazing that maintains grassy fuels across relatively large areas at levels that will not carry a surface fire. Determination of the amount of departure is based on comparison of a composite measure of fire regime attributes (vegetation characteristics; fuel composition; fire frequency, severity and pattern) to the central tendency of the natural (historical) fire regime. The amount of departure is then classified to determine the fire regime condition class. A simplified description of the fire regime condition classes and associated potential risks are presented in Table 3.21. Maps depicting Fire Regime and Condition Class are presented in Appendix I.

**Table 3.26. Fire Regime Condition Class Definitions.**

<b>Fire Regime</b>		
<b>Condition Class</b>	<b>Description</b>	<b>Potential Risks</b>
<b>Condition Class 1</b>	Within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	<p>Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics.</p> <p>Composition and structure of vegetation and fuels are similar to the natural (historical) regime.</p> <p>Risk of loss of key ecosystem components (e.g. native species, large trees, and soil) is low.</p>
<b>Condition Class 2</b>	Moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	<p>Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe).</p> <p>Composition and structure of vegetation and fuel are moderately altered.</p> <p>Uncharacteristic conditions range from low to moderate.</p> <p>Risk of loss of key ecosystem components is moderate.</p>
<b>Condition Class 3</b>	High departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	<p>Fire behavior, effects, and other associated disturbances are highly departed (more or less severe).</p> <p>Composition and structure of vegetation and fuel are highly altered.</p> <p>Uncharacteristic conditions range from moderate to high.</p> <p>Risk of loss of key ecosystem components is high.</p>



An analysis of Fire Regime Condition Class in Elmore County shows that approximately 45% of the County is in Condition Class 1 (low departure), just about 20% is in Condition Class 2 (moderate departure), with the remaining area in Condition Class 3 (Table 3.27).

**Table 3.27. FRCC by area in Elmore County.**

	<b>Condition Class</b>	<b>Acres</b>	<b>Percent of Area</b>
1	low departure	276,501	14%
2	moderate departure	1,375,544	69%
3	high departure	188,210	9%
8	agriculture	116,224	6%
9	rock/barren	8,513	0%
10	urban	5,540	0%
11	water	11,093	1%

See Appendix I for maps of Fire Regime and Conditions Class.

### **3.11.3 Predicted Fire Severity**

Current fire severity (CFS) is an estimate of the relative fire severity if a fire were to burn a site under its current state of vegetation. In other words, how much of the overstory would be removed if a fire were to burn today. The US Forest Service (Flathead National Forest) did not attempt to model absolute values of fire severity, as there are too many variables that influence fire effects at any given time (for example, temperature, humidity, fuel moisture, slope, wind speed, wind direction).

The characterization of likely fire severity was based upon historic fire regimes, potential natural vegetation, cover type, size class, and canopy cover with respect to slope and aspect. Each cover type was assigned a qualitative rating of fire tolerance based upon likely species composition and the relative resistance of each species to fire. The US Forest Service researchers defined 3 broad classes of fire tolerance: high tolerance (<20 percent post-fire mortality); moderate tolerance (20 to 80 percent mortality); and low tolerance (>80 percent mortality). We would expect that fires would be less severe within cover types comprised by species that have a high tolerance to fire (for example, western larch and ponderosa pine). Conversely, fires would likely burn more severely within cover types comprised by species having a low tolerance to fire (for example grand fir, subalpine fir). Data assignments were based upon our collective experience in the field, as well as stand structure characteristics reported in the fire-history literature. For example, if they estimated that a fire would remove less than 20 percent of the overstory, the current fire severity would be assigned to the non-lethal class (that is, NL). However, if they expected fire to remove more than 80 percent of the overstory, the current fire severity was assigned to a stand replacement class (that is, SR or SR3).

#### **3.11.3.1 Purpose**

Fire is a dominant disturbance process in the Northern Rockies. The likely effect of fire upon vegetation (i.e., current fire severity) is critical information for understanding the subsequent fire effects upon wildlife habitats, water quality, and the timing of runoff. There have been many reports of how fire suppression and timber harvest has affected vegetation patterns, fuels, and fire behavior. The US Forest Service researchers from the Flathead National Forest, derived the current fire severity theme explicitly to compare with the historical fire regime theme to evaluate

how fire severity has changed since Euro-American settlement (that is, to derive fire-regime condition class).

### 3.11.3.2 General Limitations

These data were designed to characterize broad scale patterns of estimated fire severity for use in regional and subregional assessments. Any decisions based on these data should be supported with field verification, especially at scales finer than 1:100,000. Although the resolution of the CFS theme is 90 meter cell size, the expected accuracy does not warrant their use for analyses of areas smaller than about 10,000 acres (for example, assessments that typically require 1:24,000 data).

Current fire severity rule-set was developed for an "average burn day" for the specific vegetation types in our area. Any user of these data should familiarize themselves with the rule sets to better understand our estimate of current fire severity.

**Table 3.28. Predicted Fire Severity by area in Elmore County.**

Predicted Fire Severity		Acres	Percent of Area
1	non-lethal	54,078	3%
2	mixed severity, short interval	45,822	2%
3	mixed severity, long interval	265,816	13%
4	Mixed severity, variable interval	1,231	0%
5	stand replacement, forest	187,391	9%
6	Non-forest stand replacement, short interval	825,112	42%
7	Non-forest mixed severity, moderate interval	41,424	2%
8	Non-forest stand replacement, moderate interval	277,205	14%
9	Non-forest stand replacement, long interval	142,174	7%
10	agriculture	116,224	6%
11	rock/barren	8,513	0%
13	urban	5,540	0%
14	water	11,093	1%

See Appendix I for a map of Predicted Fire Severity.

### 3.11.4 On-Site Evaluations

Fire control and evaluation specialists as well as hazard mitigation consultants evaluated the communities of Elmore County to determine, first-hand, the extent of risk and characteristics of hazardous fuels in the Wildland-Urban Interface. The on-site evaluations have been summarized in written narratives and are accompanied by photographs taken during the site visits (Chapter 3). These evaluations included the estimation of fuel models as established by Anderson (1982). These fuel models are described in the following section of this document.

In addition, field personnel completed FEMA's Fire Hazard Severity Forms and Fire Hazard Rating Criteria Worksheets. These worksheets and standardized rating criteria allow comparisons to be made between all of the counties in the country using the same benchmarks. The FEMA rating forms are summarized for each community in Appendix II.

### 3.11.5 Fuel Model Descriptions

Anderson (1982) developed a categorical guide for determining fuel models to facilitate the linkage between fuels and fire behavior. These 13 fuel models, grouped into 4 basic groups: grass, chaparral and shrub, timber, and slash, provide the basis for communicating fuel conditions and evaluating fire risk. There are a number of ways to estimate fuel models in forest and rangeland conditions. The field personnel from Northwest Management, Inc., that evaluated communities and other areas of Elmore County have all been intricately involved in wildland fire fighting and the incident command system. They made ocular estimates of fuel models they observed. In an intense evaluation, actual sampling would have been employed to determine fuel models and fuel loading. The estimations presented in this document (Chapter 3) are estimates based on observations to better understand the conditions observed.

**Fuel Model 0-** This type consists of non-flammable sites, such as exposed mineral soil and rock outcrops. Other lands are also identified in this type.

#### 3.11.5.1 Grass Group

##### 3.11.5.1.1 Fire Behavior Fuel Model 1

Fire spread is governed by the fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Fires are surface fires that move rapidly through the cured grass and associated material. Very little shrub or timber is present, generally less than one-third of the area.

Grasslands and savanna are represented along with stubble, grass-tundra, and grass-shrub combinations that met the above area constraint. Annual and perennial grasses are included in this fuel model.

*This fuel model correlates to 1978 NFDRS fuel models A, L, and S.*

##### **Fuel model values for estimating fire behavior**

Total fuel load, < 3-inch dead and alive, tons/acre .....	0.74
Dead fuel load, ¼-inch, tons/acre .....	0.74
Live fuel load, foliage, tons/acre .....	0
Fuel bed depth, feet .....	1.0

##### 3.11.5.1.2 Fire Behavior Fuel Model 2

Fire is spread primarily through the fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, in addition to litter and dead-down stemwood from the open shrub or timber overstory, contribute to the fire intensity. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area may generally fit this model; such stands may include clumps of fuels that generate higher intensities an that may produce firebrands. Some pinyon-juniper may be in this model.

*This fuel model correlates to 1978 NFDRS fuel models C and T.*

##### **Fuel model values for estimating fire behavior**

Total fuel load, < 3-inch dead and alive, tons/acre .....	4.0
Dead fuel load, ¼-inch, tons/acre .....	2.0
Live fuel load, foliage, tons/acre .....	0.5
Fuel bed depth, feet .....	1.0

### 3.11.5.1.3 Fire Behavior Fuel Model 3

Fires in this fuel are the most intense of the grass group and display high rates of spread under the influence of wind. Wind may drive fire into the upper heights of the grass and across standing water. Stands are tall, averaging about 3 feet (1 m), but considerable variation may occur. Approximately one-third or more of the stand is considered dead or cured and maintains the fire. Wild or cultivated grains that have not been harvested can be considered similar to tall prairie and marshland grasses.

*This fuel correlates to 1978 NFDRS fuel model N.*

#### Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and live, tons/acre .....	3.0
Dead fuel load, ¼-inch, tons/acre .....	3.0
Live fuel load, foliage tons/acre .....	0
Fuel bed depth, feet.....	2.5

### 3.11.5.2 Shrub Group

#### 3.11.5.2.1 Fire Behavior Fuel Model 4

Fire intensity and fast-spreading fires involve the foliage and live and dead fine woody material in the crowns of a nearly continuous secondary overstory. Stands of mature shrubs, 6 or more feet tall, such as California mixed chaparral, the high pocosin along the east coast, the pinebarrens of New Jersey, or the closed jack pine stands of the north-central States are typical candidates. Besides flammable foliage, dead woody material in the stands significantly contributes to the fire intensity. Height of stand qualifying for this model depends on local conditions. A deep litter layer may also hamper suppression efforts.

*This fuel model represents 1978 NFDRS fuel models B and O; fire behavior estimates are more severe than obtained by Models B or O.*

#### Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre .....	13.0
Dead fuel load, ¼-inch, tons/acre .....	5.0
Live fuel load, foliage, tons/acre .....	5.0
Fuel bed depth, feet.....	6.0

#### 3.11.5.2.2 Fire Behavior Fuel Model 5

Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area. Young, green stands with no dead wood would qualify: laurel, vine maple, alder, or even chaparral, manzanita, or chamise.

*No 1978 NFDRS fuel model is represented, but model 5 can be considered as second choice for NFDRS model D or as third choice for NFDRS model T. Young green stands may be up to 6 feet (2m ) high but have poor burning properties because of live vegetation.*

**Fuel model values for estimating fire behavior**

Total fuel load, <3-inch dead and live, tons/acre .....	3.5
Dead fuel load, ¼-inch, tons/acre .....	1.0
Live fuel load, foliage, tons/acre .....	2.0
Fuel bed depth, feet.....	2.0

**3.11.5.2.3 Fire Behavior Fuel Model 6**

Fires carry through the shrub layer where the foliage is more flammable than fuel model 5, but this requires moderate winds, greater than 8 mi/h (13 km/h) at mid-flame height. Fire will drop to the ground at low wind speeds or at openings in the stand. The shrubs are older, but not as tall as shrub types of model 4, nor do they contain as much fuel as model 4. A broad range of shrub conditions is covered by this model. Fuel situations to be considered include intermediate stands of chamise, chaparral, oak brush, low pocosin, Alaskan spruce taiga, and shrub tundra. Even hardwood slash that has cured can be considered. Pinyon-juniper shrublands may be represented but may over-predict rate of spread except at high winds, like 20 mi/h (32 km/h) at the 20-foot level.

*The 1978 NFDRS fuel models F and Q are represented by this fuel model. It can be considered a second choice for models T and D and a third choice for model S.*

**Fuel model values for estimating fire behavior**

Total fuel load, <3-inch dead and live, tons/acres.....	6.0
Dead fuel load, 1/4 –inch, tons/acre .....	1.5
Live fuel load, foliage, tons/acre .....	0
Fuel bed depth, feet.....	2.5

**3.11.5.2.4 Fire Behavior Fuel Model 7**

Fires burn through the surface and shrub strata with equal ease and can occur at higher dead fuel moisture contents because of the flammability of live foliage and other live material. Stands of shrubs are generally between 2 and 6 feet (0.6 and 1.8 m) high. Palmetto-gallberry understory-pine overstory sites are typical and low pocosins may be represented. Black spruce-shrub combinations in Alaska may also be represented.

*This fuel model correlates with 1978 NFDRS model D and can be a second choice for model Q.*

**Fuel model values for estimating fire behavior**

Total fuel load, <3-inch dead and live, tons/acre .....	4.9
Dead fuel load, ¼-inch, tons/acre .....	1.1
Live fuel load, foliage, tons/acre .....	0.4
Fuel bed depth, feet.....	2.5

**3.11.5.3 Timber Group**

**3.11.5.3.1 Fire Behavior Fuel Model 8**

Slow-burning ground fires with low flame lengths are generally the case, although the fire may encounter an occasional “jackpot” or heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperatures, low humidities, and high winds do the fuels pose fire hazards. Closed canopy stands of short-needle conifers or hardwoods that have

leafed out support fire in the compact litter layer. This layer is mainly needles, leaves, and occasionally twigs because little undergrowth is present in the stand. Representative conifer types are white pine, and lodgepole pine, spruce, fire and larch

*This model can be used for 1978 NFDRS fuel models H and R.*

**Fuel model values for estimating fire behavior**

Total fuel load, <3-inch, dead and live, tons/acre .....	5.0
Dead fuel load, ¼-inch, tons/acre .....	1.5
Live fuel load, foliage, tons/acre .....	0
Fuel bed depth, feet .....	0.2

**3.11.5.3.2 Fire Behavior Fuel Model 9**

Fires run through the surface litter faster than model 8 and have longer flame height. Both long-needle conifer stands and hardwood stands, especially the oak-hickory types, are typical. Fall fires in hardwoods are predictable, but high winds will actually cause higher rates of spread than predicted because of spotting caused by rolling and blowing leaves. Closed stands of long-needled pine like ponderosa, Jeffrey, and red pines, or southern pine plantations are grouped in this model. Concentrations of dead-down woody material will contribute to possible torching out of trees, spotting, and crowning.

*NFDRS fuel models E, P, and U are represented by this model. It is also a second choice for models C and S.*

**Fuel model values for estimating fire behavior**

Total fuel load, <3-inch dead and live, tons/acre .....	3.5
Dead fuel load, ¼-inch, tons/acre .....	2.9
Live fuel load, foliage, tons/acre .....	0
Fuel bed depth, feet .....	0.2

**3.11.5.3.3 Fire Behavior Fuel Model 10**

The fires burn in the surface and ground fuels with greater fire intensity than the other timber litter models. Dead-down fuels include greater quantities of 3-inch (7.6 cm) or larger limbwood, resulting from overmaturity or natural events that create a large load of dead material on the forest floor. Crowning out, spotting, and torching of individual trees are more frequent in this fuel situation, leading to potential fire control difficulties. Any forest type may be considered if heavy down material is present; examples are insect- or disease-ridden stands, wind-thrown stands, overmature situations with dead fall, and aged light thinning or partial-cut slash.

*The 1978 NFDRS fuel model G is represented.*

**Fuel model values for estimating fire behavior**

Total fuel load, < 3-inch dead and live, tons/acre .....	12.0
Dead fuel load, ¼-inch, tons/acre .....	3.0
Live fuel load, foliage, tons/acre .....	2.0
Fuel bed depth, feet .....	1.0

The fire intensities and spread rates of these timber litter fuel models are indicated by the following values when the dead fuel moisture content is 8 percent, live fuel moisture is 100 percent, and the effective windspeed at mid-flame height is 5 mi/h (8 km/h):

**Table 3.29. Comparative Fire Intensities and Rates of Spread in Timber Fuel Models.**

Fuel Model	Rate of Spread	Flame length
	Chains/hour	Feet
8	1.6	1.0
9	7.5	2.6
10	7.9	4.8

Fires such as above in model 10 are at the upper limit of control by direct attack. More wind or drier conditions could lead to an escaped fire.

### 3.11.5.4 Logging Slash Group

#### 3.11.5.4.1 Fire Behavior Fuel Model 11

Fires are fairly active in the slash and herbaceous material intermixed with the slash. The spacing of the rather light fuel load, shading from overstory, or the aging of the fine fuels can contribute to limiting the fire potential. Light partial cuts or thinning operations in mixed conifer stands, hardwood stands, and southern pine harvests are considered. Clearcut operations generally produce more slash than represented here. The less-than-3-inch (7.6-cm) material load is less than 12 tons per acre (5.4 t/ha). The greater-than-3-inch (7.6-cm) is represented by not more than 10 pieces, 4 inches (10.2 cm) in diameter, along a 50-foot (15 m) transect.

*The 1978 NFDRS fuel model K is represented by this model.*

#### Fuel model values for estimating fire behavior

Total fuel load, < 3-inch, dead and live, tons/acre .....	11.5
Dead fuel load, ¼-inch, tons/acre .....	1.5
Live fuel load, foliage, tons/acre .....	0
Fuel bed depth, feet .....	1.0

#### 3.11.5.4.2 Fire Behavior Fuel Model 12

Rapidly spreading fires with high intensities capable of generating firebrands can occur. When fire starts, it is generally sustained until a fuel break or change in fuels is encountered. The visual impression is dominated by slash and much of it is less than 3 inches (7.6 cm) in diameter. The fuels total less than 35 tons per acres (15.6 t/ha) and seem well distributed. Heavily thinned conifer stands, clearcuts, and medium or heavy partial cuts are represented. The material larger than 3 inches (7.6 cm) is represented by encountering 11 pieces, 6 inches (15.3 cm) in diameter, along a 50-foot (15-m) transect.

*This model depicts 1978 NFDRS model J and may overrate slash areas when the needles have dropped and the limbwood has settled. However, in areas where limbwood breakup and general weathering have started, the fire potential can increase.*

#### Fuel model values fore estimating fire behavior

Total fuel load, < 3-inch, dead and live, tons/acre .....	34.6
Dead fuel load, ¼-inch, tons/acre .....	4.0
Live fuel load, foliage, tons/acre .....	0
Fuel bed depth, feet .....	2.3

**3.11.5.4.3 Fire Behavior Fuel Model 13**

Fire is generally carried across the area by a continuous layer of slash. Large quantities of material larger than 3 inches (7.6 cm) are present. Fires spread quickly through the fine fuels and intensity builds up more slowly as the large fuels start burning. Active flaming is sustained for long periods and a wide variety of firebrands can be generated. These contribute to spotting problems as the weather conditions become more severe. Clearcuts and heavy partial-cuts in mature and overmature stands are depicted where the slash load is dominated by the greater-tayhn-3-inch (7.6-cm) diameter material. The total load may exceed 200 tons per acre (89.2 t/ha) but fuel less than 3 inches (7.6 cm) is generally only 10 percent of the total load. Situations where the slash still has “red” needles attached but the total load is lighter, more like model 12, can be represented because of the earlier high intensity and quicker area involvement.

*The 1978 NFDRS fuel model 1 is represented. Areas most commonly fitting his model are old-growth stands west of the Cascade and Sierra Nevada Mountains. More efficient utilization standards are decreasing the amount of large material left in the field.*

**Fuel model values for estimating fire behavior**

Total fuel load, < 3-inch dead and live, tons/acre .....	58.1
Dead fuel load, ¼-inch, tons/acre .....	7.0
Live fuel load, foliage, tons/acre .....	0
Fuel bed depth, feet .....	3.0

**For other slash situations:**

Hardwood slash .....	Model 6
Heavy “red” slash.....	Model 4
Overgrown slash.....	Model 10
Southern pine clearcut slash.....	Model 12

The comparative rates of spread and flame lengths for the slash models at 8 percent dead fuel moisture content and a 5 mi/h (8 km/h) mid-flame wind are presented in Table 3.30.

**Table 3.30. Comparative Fire Intensities and Rates of Spread in Slash Fuel Models.**

<b>Fuel Model</b>	<b>Rate of Spread Chains/hour</b>	<b>Flame length Feet</b>
11	6.0	3.5
12	13.0	8.0
13	13.5	10.5

**3.12 Wildland-Urban Interface**

**3.12.1 People and Structures**

A key component in meeting the underlying need is the protection and treatment of fire hazard in the wildland-urban interface. The wildland-urban interface refers to areas where wildland vegetation meets urban developments, or where forest fuels meet urban fuels (such as houses). These areas encompass not only the interface (areas immediately adjacent to urban development), but also the continuous slopes and fuels that lead directly to a risk to urban developments. Reducing the fire hazard in the wildland urban interface requires the efforts of



federal, state, local agencies, and private individuals (Norton 2002). “The role of [most] federal agencies in the wildland urban interface includes wildland fire fighting, hazard fuels reduction, cooperative prevention and education and technical experience. Structural fire protection [during a wildfire] in the wildland urban interface is [largely] the responsibility of Tribal, state, and local governments” (USFS 2001). Property owners share a responsibility to protect their residences and businesses and minimize fire danger by creating defensible areas around them and taking other measures to minimize the fire risks to their structures (USFS 2001). With treatment, a wildland-urban interface can provide firefighters a defensible area from which to suppress wildland fires or defend communities. In addition, a wildland urban interface that is properly thinned will be less likely to sustain a crown fire that enters or originates within it (Norton 2002).

By reducing hazardous fuel loads, ladder fuels, and tree densities, and creating new and reinforcing defensible space, landowners would protect the wildland-urban interface, the biological resources of the management area, and adjacent property owners by:

- minimizing the potential of high-severity ground or crown fires entering or leaving the area;
- reducing the potential for firebrands (embers carried by the wind in front of the wildfire) impacting the WUI. Research indicates that flying sparks and embers (firebrands) from a crown fire can ignite additional wildfires as far as 1¼ miles away during periods of extreme fire weather and fire behavior (McCoy *et al.* 2001 as cited in Norton 2002);
- improving defensible space in the immediate areas for suppression efforts in the event of wildland fire.

Four wildland/urban conditions have been identified for use in the wildland urban interface (Norton 2002). These include the Interface Condition, Intermix Condition, Occluded Condition, and Rural Condition. Descriptions of each are as follows:

- **Interface Condition** – a situation where structures abut wildland fuels. There is a clear line of demarcation between the structures and the wildland fuels along roads or back fences. The development density for an interface condition is usually 3+ structures per acre;
- **Intermix Condition** – a situation where structures are scattered throughout a wildland area. There is no clear line of demarcation, the wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres;
- **Occluded Condition** – a situation, normally within a city, where structures abut an island of wildland fuels (park or open space). There is a clear line of demarcation between the structures and the wildland fuels along roads and fences. The development density for an occluded condition is usually similar to that found in the interface condition and the occluded area is usually less than 1,000 acres in size; and
- **Rural Condition** – a situation where the scattered small clusters of structures (ranches, farms, resorts, or summer cabins) are exposed to wildland fuels. There may be miles between these clusters.

The location of structures in Elmore County have been mapped and are presented on a variety of maps in this analysis document; specifically in Appendix I. The location of all structures was determined by examining two sets of remotely sensed images. The more detailed information was garnered from digital ortho-photos at a resolution of 1 meter (from 1998). For those areas

not covered by the 1 meter DOQQ images, SPOT satellite imagery at a resolution of 10 meters was used (from 2002). These records were augmented with data collected on hand-held GPS receivers to record the location of structures, especially in areas where new housing developments were seen (esp. Oasis, Tipanuk, and Mountain Home rural areas).

All structures are represented by a “dot” on the map. No differentiation is made between a garage and a home, or a business and a storage building. The density of structures and their specific locations in this management area are critical in defining where the potential exists for casualty loss in the event of a wildfire in the region.

By evaluating this structure density, we can define WUI areas on maps by using mathematical formulae and population density indexes to define the WUI based on where structures are located. The resulting population density indexes create concentric circles showing high density areas of Interface and Intermix WUI, as well as Rural WUI (as defined by Secretary Norton of the Department of Interior). This portion of the analysis allows us to “see” where the highest concentrations of structures are located in reference to high risk landscapes, limiting infrastructure, and other points of concern.

It is critical to understand that in the protection of people, structures, infrastructure, and unique ecosystems, this portion of the analysis only serves to identify structures and by some extension the people that inhabit them. It does not define the location of infrastructure and unique ecosystems. Other analysis tools will be used for those items.

The WUI interface areas as defined here are presented in map form in Appendix I.

# Elmore County Wildland-Urban Interface Wildfire Mitigation Plan

## Wildland-Urban Interface

### Legend

**Structures**

- Urban Structures
- WUI Structures
- Rural Structures
- ★ **Communities**

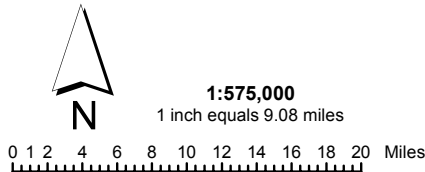
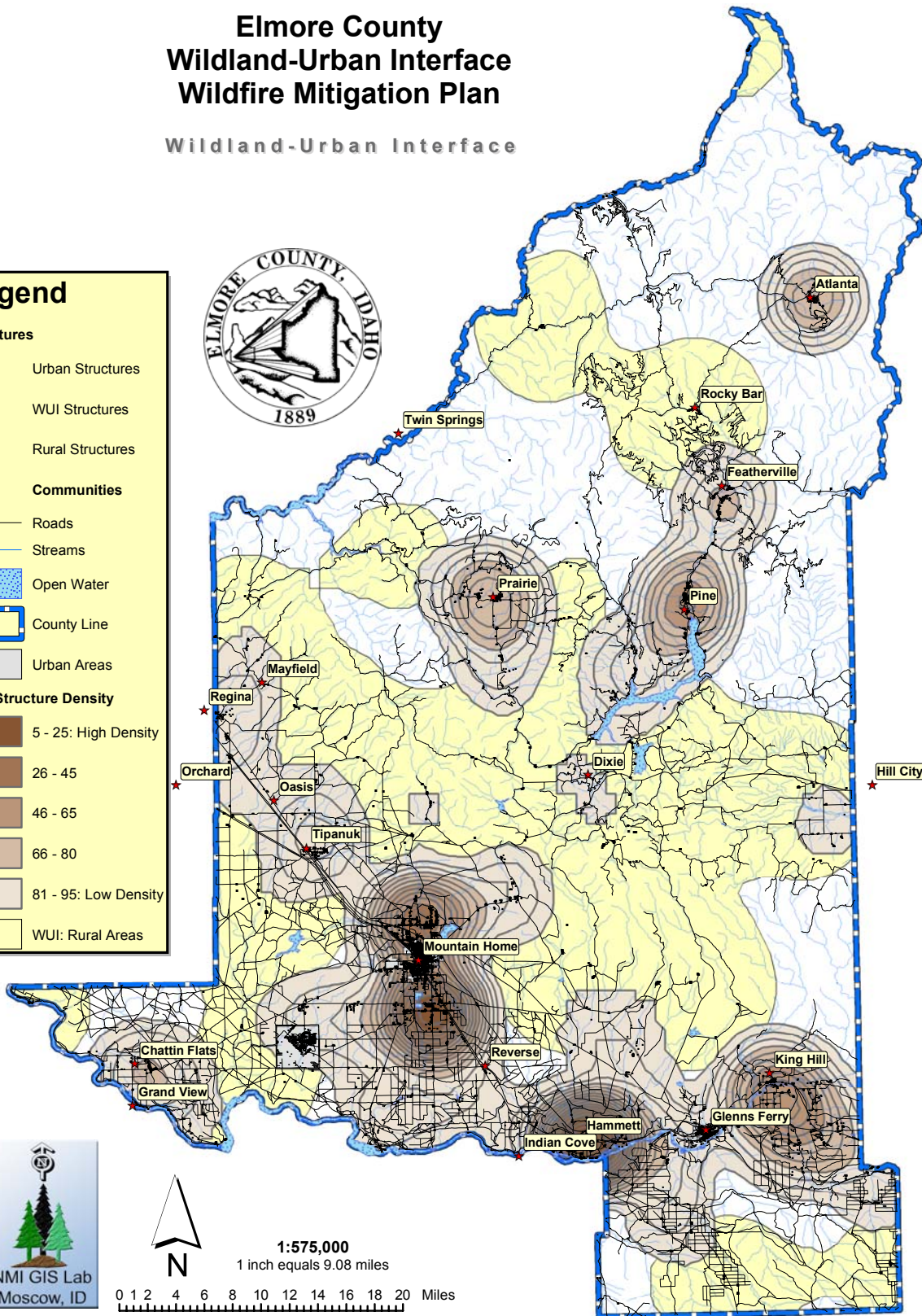
Roads  
Streams  
Open Water

County Line

Urban Areas

**WUI Structure Density**

- 5 - 25: High Density
- 26 - 45
- 46 - 65
- 66 - 80
- 81 - 95: Low Density
- WUI: Rural Areas



*This map is presented for reference in this section of the plan. This map, and additional maps are detailed in Appendix I.*

### **3.12.2 Infrastructure**

Elmore County has both significant infrastructure and unique ecosystems within its boundaries. Of note for this WUI Fire Mitigation Plan is the existence of state highway routes (eg., Highway 52, and Interstate 84), and the presence of high tension power lines supplying surrounding counties. These resources will be considered in the protection of infrastructural resources for Elmore County and to the larger extent of this region, and the rest of Idaho.

The High Tension Power Lines maintained by Idaho Power have been mapped and are presented in Appendix I. Protection of these lines from loss during a wildfire is paramount in as much as the electrical power they provide serves not only the communities of Elmore County but of surrounding counties. The protection of these lines allows for community sustainability, support of the economic viability of Elmore County, and the protection of people who rely on that power. Fuels mitigation under power lines has received considerable attention in forested ecosystems as timber is thinned and heavy accumulations of brush are managed. This practice should be mandated into the future. However, the importance of management of rangeland ecosystems under high tension power lines should not be overlooked. Sagebrush intermixed with grasses and other species, during extreme fire weather events, coupled with steep slopes can produce considerable heat and particulate matter. When this occurs under power lines, the result can be arcing between lines and even failure of the electrical media itself. Fuel mitigation treatments in high risk areas, especially where multiple lines are co-located, will be recommended for treatments (Chapter 4).

### **3.12.3 Ecosystems**

Elmore County is a diverse ecosystem with a complex array of vegetation, wildlife, and fisheries that have developed with, and adapted to fire as a natural disturbance process. A century of wildland fire suppression coupled with past land-use practices (primarily timber harvesting) has altered plant community succession and has resulted in dramatic shifts in the fire regimes and species composition. As a result, forests and rangelands in Elmore County have become more susceptible to large-scale, high intensity fires posing a threat to life, property, and natural resources including wildlife and special status plant populations and habitats. High-intensity, stand-replacing fires have the potential to seriously damage soils and native vegetation. In addition, an increase in the number of large high intensity fires throughout the nation's forest and rangelands, has resulted in significant safety risks to firefighters and higher costs for fire suppression (House of Representatives, Committee on Agriculture, Washington, DC, 1997).

Changes in plant community composition and structure are most pronounced in the dry and semi-Mesic areas. In some dry meadows and grassland habitats, a shift in fire regimes has resulted in changes in ecological succession patterns, such as accelerated encroachment of trees and shrubs. A shift in plant species composition, due to invasion and spread of invasive herbaceous species, has also influenced fire regime and frequency.

### **3.13 Soils**

Most of southern Idaho, including Elmore County, is in a geographic region known as the Idaho Batholith. This area is typically characterized as a granites soil composition with high erosion potential and often times, poor slope stability. Recovery potential of disturbed sites is poor due to thin organic horizons.

Our soil resource is an extremely important resource for maintaining a healthy ecosystem and economy. Fire can play an intricate role in this process, if it occurs under normal conditions of light fuels associated with low intensity underburns. However, the buildup of fuels and consequent high severity fires can cause soils to become water repellent (hydrophobic), and thus greatly increases the potential for overland flow during intense rains. Soil in degraded conditions does not function normally, and will not be able to sustain water quality, water yield, or plant communities that have normal structure, composition, and function. Fire is also strongly correlated with the carbon-nutrient cycles and the hydrologic cycle. Fire frequency, extent, and severity are controlled to a large degree by the availability of carbon, as well as the moisture regime (Quigley & Arbelbide 1997).

Soils were evaluated for their propensity to become hydrophobic during and after a fire as evidenced by the presence of clay and clay derivatives (e.g., clay loam, cobbly clay) in the upper soil layers. In addition, their permeability and tendency to allow runoff to infiltrate the soil rapidly was evaluated. In general, with notable exceptions, the majority of the area within Elmore County has a clay content in the Bt horizon from 5 to 63 percent (highly variable). Much of the area has little to no reported clay content in the A horizon with a medial silt loam to a gravelly medial silt loam present. On average these soils are well drained with moderately slow permeability.

Low to moderate intensity fires would be not be expected to damage soil characteristics in the region, especially if the hotter fires in this range were limited to small extents associated with jackpots of cured fuels. Hot fires providing heat to the Bt horizon substrate depth have the potential to create hydrophobic characteristics in that layer. This can result in increased overland flow during heavy rains, following wildfire events, potentially leading to mass wasting. Rocky and gravelly characteristics in the A horizon layer would be expected to be displaced, while the silty and loamy fines in these soils may experience an erosion and displacement potential. These soils will experience the greatest potential impacts resulting from hot fires that burn for prolonged periods (especially on steep slopes).

The National Resource Conservation Service (NRCS) has mapped a large portion of Elmore County in detail. A complete soil survey for Elmore County was published in May 1991. Please refer the Elmore County NRCS Soil Survey Report to view each soil unit in the County and the associated characteristics relating to the effects of wildland fire.

The Elmore County Comprehensive Plan sets forth the following goals in relation to soil resources in the county:

### **Soils Goal 1**

To protect the quality and quantity of the soil resources in Elmore County.

#### **Soils Objectives:**

1. Prevent undue erosion of land through reclamation. Re-vegetation that is compatible to the area should be encouraged.
2. Encourage commercial, industrial, and residential growth into areas where soils are of least value for agriculture.
3. Utilize the most current NRCS and Soil Conservation Service, Soil Survey for Elmore County to identify suitable soils for subsurface sewage disposal.
4. Encourage and support re-vegetation programs after wildfire or range fires.

This goal and its objectives, especially #4, are completely consistent with this planning process. The recommendations are incorporated into this plan through this reference. The following

section will detail some of the formal recommendations for maintaining soil processes in defense of wildfires, specific to the soils found in Elmore County. However, it should be noted that site specific reclamation activities should be developed and implemented after each large fire event to insure suitable treatments are implemented.

### **3.13.1 Fire Mitigation Practices to Maintain Soil Processes**

Firelines constructed by hand or with the use of machinery will have varying impacts, depending upon construction techniques. If only the surface litter is removed in the fireline construction, minor increases to soil erosion may occur. If trenches are dug which channelize runoff down steep slopes, heavy rilling or gullying could occur depending upon rock content of surface layers exposed. Jackpot burning and, to a greater extent, pile burning would result in greater soil heating and localized impacts. Loss of soil carbon, nitrogen, sulphur, phosphorus, potassium, and soil organisms would be high in the soil surface layer. Soil physical structure could be altered thereby creating hydrophobic soils, especially where clay content is moderate or high.

Indirect effects of prescribed burning to slope stability are highly variable in the soil types found in Elmore County. Vegetation structure, including root strength after over burning, is maintained from three to fifteen years following low to moderate intensity burns and therefore soil saturation potential is not greatly altered. Re-vegetation of burned areas within this time frame will be a critical component to maintaining soil resources and pre-empting noxious weeds and invasive species (such as Cheatgrass) from occupying the site. Locale experiencing high intensity burns will need to be evaluated immediately for mechanical erosion control followed by re-vegetation efforts. Holding soils in place will be a difficult challenge in many locations, especially on moderate to steep slopes.

Cumulative effects on the soil resource include past effects from timber harvest, grazing, mining, and fire. Timber harvest has the potential to cause substantial soil damage due to the use of heavy equipment for harvesting, yarding, and site preparation. The damage mostly includes soil compaction and displacement of the organic rich surface soil layers. Where tractor yarding and tractor-piling have occurred, typically from 30 to 80 percent of a treated unit will have damaged soils, with negative effects on long-term soil productivity.

Where heavy grazing has occurred in the past, there is also a likelihood soil productivity has been reduced. This is especially true in riparian areas where animal concentrations have historically been the greatest. These areas generally have easily compacted soils, and are where cattle tend to linger if not managed well. Mining also has significant effects on soil quality through soil compaction and mass displacement. Grazing across Elmore County was observed to be maintained in a sustainable manner without the overgrazing found in other areas of the region.

Severe fires in the past have consumed surface organics and volatilized nitrogen into the air. On some sites, however, these severe burns are a natural process, and therefore the inherent soil productivity may not be reduced. On other sites, however, where low intensity underburns typically occurred, high intensity wildland fires have consumed amounts of soil organics in excess of the historic patterns. Furthermore, excessive soil heating in these intense fires likely resulted in creation of water repellent soils, and therefore increased overland flow and soil erosion. In these cases, it can be assumed that wildland fires have reduced long-term soil productivity. Soil compaction damage typically is persistent in the area; several to many decades of rest from further compactive forces are needed until adequate soil recovery occurs. Loss of organics due to displacement and severe fire also requires decades to recuperate. This slow recovery from soil damage makes cumulative effects to soil productivity and soil hydrologic function a major concern.

To avoid potential impacts, wherever possible firelines should be located outside of highly erosive areas, steep slopes, intermittent streams, and riparian and other sensitive areas. Following prescribed fire or fire suppression activities, firelines should be rehabilitated.

Prescribed fire (low to moderate intensity) should release nutrients into the soil and the fertilization effects of ash would provide an important source of nutrition for vegetation in the area. In addition to increasing nitrification of the soils and increasing minerals and salt amounts in the soil, the ash and charcoal residue resulting from incomplete combustion would aid in soil buildup and soil enrichment by being added as organic matter to the soil profile. The added material works in combination with dead and dying root systems to make the soil more porous, better able to retain water, and less compact while increasing needed sites and surface areas for essential microorganisms, mycorrhiza, and roots (Vogl 1979, Wright and Bailey 1980, Wright and Bailey 1982).

### **3.14 Hydrology**

The Idaho Water Resource Board is charged with the development of the Idaho Comprehensive State Water Plan. Included in the State Water Plan are the statewide water policy plan, and component basin and water body plans which cover specific geographic areas of the state (IDEQ 2003). The Idaho Department of Water Resources has prepared General Lithologies of the Major Ground Water Flow Systems in Idaho. The majority of Elmore County is in the "Payette" watershed analysis area.

The state may assign or designate beneficial uses for particular Idaho water bodies to support. These beneficial uses are identified in sections 3.35 and 100.01 - .05 of the Idaho water quality standards (WQS). These uses include:

- **Aquatic Life Support:** cold water biota, seasonal cold water biota, warm water biota, and salmonid spawning;
- **Contact Recreation:** primary (swimming) and secondary (boating);
- **Water Supply:** domestic, agricultural, and industrial; and
- **Wildlife Habitat and Aesthetics.**

While there may be competing beneficial uses in streams, federal law requires DEQ to protect the most sensitive of these beneficial uses (IDEQ 2003).

The geology and soils of this region lead to rapid to moderate moisture infiltration. Slopes are moderate to steep, however, headwater characteristics of the watersheds in the north end of the county lead to a high degree of infiltration as opposed to a propensity for overland flow. Thus sediment delivery efficiency of first and third order streams is fairly low. The bedrock is typically well fractured and moderately soft. This fracturing allows excessive soil moisture to rapidly infiltrate into the rock and thus surface runoff is rare. Natural mass stability hazards associated with slides are low. Natural sediment yields are low for these watersheds. However, disrupted vegetation patterns from logging (soil compaction) and wildland fire (especially hot fires that increase soil hydrophobic characteristics), can lead to increased surface runoff and debris flow to stream channels.

A correlation to mass wasting due to the removal of vegetation caused by high intensity wildland fire has been documented. Burned vegetation can result in changes in soil moisture and loss of rooting strength that can result in slope instability, especially on slopes greater than 30%. The greatest watershed impacts from increased sediment will be in the lower gradient, depositional stream reaches.

The Elmore County Comprehensive Plan addresses Surface and Ground Water issues specifically. The following is an excerpt from that planning process:

“One of the more important watersheds in the State of Idaho lies in Elmore County, furnishing irrigation water to the Boise Valley. Three major reservoirs on the Boise River are entirely or partially within the County. They are Anderson Ranch, containing 432,178 acre feet; Arrowrock, 286,600 feet; and Lucky Peak 278,276 acre feet, with a total capacity of 998,154 acre feet of water. The water is stored for irrigation, power generation, and flood control, as well as for recreational use.

North of Atlanta between the Middle and North Forks of the Boise River is an area of high mountainous country that is part of the Sawtooth National Recreation Area. It is estimated that there are 500 glacier-formed lakes that provide fishing and other forms of recreation to those that walk or pack into this area of awesome beauty. The Trinity Mountain area also contains glaciated lakes, some of which are accessible by road.

Reservoirs belonging to the Mountain Home Irrigation District supply water to about 4,400 acres, and provide some of the finest fishing in the County. They are Little Camas Reservoir, 24,000 acre-feet; Long Tom Reservoir, 3,700 acre feet; and Mountain Home Reservoir, 5,400 acre feet. Private reservoirs that have been built for irrigation purposes are the Blair/Trail Diversion Dam and Reservoir, the Morrow Reservoir, three reservoirs on Hot Creek, two reservoirs on Bennett Creek and Walker Reservoir. Some of these are also used for recreational purposes.

The Snake River provides over half of the water for irrigation in the County and is a source of power generated at Bliss Dam and C.J. Strike Dam. It provides boating, fishing, and hunting as well as being a scenic attraction. The middle portion of the Snake River is a working river and it is the prime source of water for irrigated agriculture in the County. The County has a few hot water artesian wells and springs. Several geothermal wells are being used for irrigation in the Snake River Plains area. Hot water springs can be found along the front range and on the Boise River.

In the late 1970's the Central District Health Department made the recommendation that no development or building be allowed northeast of Mountain Home without an U.S. Geological Survey of the soils because of potential contamination of ground water supplies. Pollution is not the only threat to the ground water source. Lowering the water level through use in excess of recovery is another threat that must be taken into account in planning. A U.S. Geological Survey prepared in cooperation with the Idaho Department of Water Resources in December of 1977 makes the following summary and conclusion:

"Development of the ground-water resources in the Mountain Home plateau area has caused water level decline in several places, the largest of which are south of Mountain Home, where water levels have declined more than 20 feet in the past nine years. Although the total amount of water in storage in the aquifers may be considerable, it has not yet been determined. Present well-hydrography data indicate that additional large-scale ground water development will probably result in increased long-term water-level declines, which may result in economically prohibitive pumping lifts and use of excessive amounts of energy. Therefore, it seems that large-scale new agricultural development on the plateau would depend heavily on the availability of surface water."

In Elmore County, recharge of ground water systems is dependent on water from the Boise River Basin, runoff from adjacent mountains, and precipitation. In the 1994, Elmore County Comprehensive Plan, the area near the I-84 Fairfield interchange was



designated as a groundwater recharge protection area. Development restrictions are still needed in this area to protect groundwater quality and quantity.

**Water Goal 1** (from the Elmore County Comprehensive Plan)

To protect, develop, and maintain the quality and quantity of our water resource.

**Water Goal 2** (from the Elmore County Comprehensive Plan)

Provide land development incentives for water conservation and water quality protection.

**Water Objectives:**

1. Encourage land management and development of soil and water resources for economic growth of the County.
2. Work with the Central District Health Department to control and prevent sewage and solid waste pollutant problems in the County.
3. Coordinate with the State Water Resources staff to monitor areas of declining groundwater levels and take necessary action to halt such lowering before it becomes critical, including recharging from stream sources.
4. Encourage the use of natural landscaping in order to conserve water. Encourage re-vegetation in disturbed areas.
5. Water quality should be protected and preserved in all proposed developments.
6. Consider a future study to determine the possibility of designating a "Area of Critical Concern" along the Snake River corridor through Elmore County.
7. Work with the Idaho Department of Water Resources and seek approval to study and construct necessary water development projects in the Boise River drainage system in order to transfer water into arid portions of Elmore County.
8. Continue to work with those federal, state, local and private officials that affect the upstream water quality and quantity of the Snake River to protect water quality and quantity for Elmore County residents and water users.
9. Provide land development incentives such as density transfer or increased development densities when measurable water conservation features are incorporated into new development projects.
10. Continue to protect the Mountain Home Aquifer recharge area and evaluate development proposals on a case by case basis to ensure groundwater protection.

These enumerated goals and objectives stated in the Elmore County Comprehensive Plan are consistent with this planning effort, and are integrated by this reference.

### **3.14.1 Fire Mitigation Practices to Maintain Hydrologic Processes**

The effects of wildland fire and prescribed burning on water quality are variable. The removal of the vegetative canopy will tend to reduce transpiration and increase water yield, especially during the growing season and immediately afterwards (MacDonald *et al.* 1991). Prescribed burning is used to maintain a healthy, dynamic ecosystem while meeting land management objectives. Prescribed burning objectives include reduction of natural fuels, assuring current and future habitat conditions for native plants and animals, improvement of forest health, and enhancement, protection, and maintenance of old growth and riparian areas. The majority of the burned areas are expected to receive a low intensity ground fire with some areas of moderate intensity. This may include occasional torching of single trees or larger clumps or trees and

consumption of some patches of regeneration. Impacts to soil and large woody debris are expected to be minimal, given project targets. In rangeland ecosystems, prescribed fire will have variable impacts dependant on burn intensity and proximity to streams. Stream buffering (low intensity to no burn around streams) has been shown to preserve most if not all normal sediment filtering functions.

A large, stand-replacing fire could have deleterious effects on watershed conditions, thus affecting both fish and habitat in streams. Treatment with low to moderate intensity fire would result in a mosaic pattern of burned and unburned areas of ground level vegetation species and ground level natural fuels. Some patches of shade-tolerant, fire intolerant species may also be consumed. Prescribed burning is not designed to consume all vegetation within project areas. Each treatment will leave a mosaic of burned and unburned areas. Once the target fuels and the risk of fire carrying from one tributary to another have been reduced, hand ignition may be considered on a site-specific basis.

The effects on sediment yield vary according to the intensity of fire; degree of soil disturbance; steepness of the slope and drainage network; the size of the area burned; and the extent to which the vegetation controls the movement and storage of sediment. Fire also increases surface erosion and sediment delivery rates by removing the litter layer and organic debris that traps sediment both on slopes and in the stream channel (MacDonald *et al.* 1991). The magnitude of these effects will depend on the geomorphic sensitivity of the landscape, which is largely a function of slope steepness and parent material (Swanson 1978).

Fire can greatly increase surface erosion by temporarily creating a hydrophobic soil layer. Soils within the project area are generally at moderate risk for hydrophobic conditions due to their fine-grained textures and clay content. In addition, the relatively low burn intensity of the prescribed fires will also help prevent the formation of hydrophobic soils.

The effects of wildland fire or prescribed fire are generally considered in terms of potential short-term, negative effects and long-term benefits of fuels reduction, which will result in a decreased risk of high intensity, stand-replacing fire. Potential short-term effects to streams and fish include increased risk of landslides, mass movement and debris torrents, increases in surface sediment erosion, possible reduction in streamside vegetation resulting in changes within management areas, and possible increases in water yield depending on the amount and severity of the vegetation burned. Long-term effects include increases in nutrient delivery, possible increases in woody debris in streams, and possible increases in stream temperature if shading is significantly reduced. The design criteria described above minimizes the risk that landslides, mass movement, significant increases in surface sediment yield, and significant changes in water yield will occur.

Reduction of vegetation will mostly be limited to creeping ground fires, which will reduce understory vegetation, but will not affect mature trees or result in significant mortality to the overstory. Spring burning often results in minimal riparian vegetation burned because streamside areas have higher humidity and live plant moisture. Fall burning will more likely result in understory vegetation removal, with a possibility of some tree and large shrub mortality, especially outside of riparian zones where live plant moisture is less.

Riparian buffer strips will be maintained, thereby preserving canopy cover for shading, sediment filtering, and streambank and floodplain stability (PACFISH guidelines). Areas not burned will provide significant protection from adverse water quality impacts associated with wildland fire and prescribed burning. Therefore, effects to fish and habitat in these streams from increased water yield are unlikely. The area has been roaded from past management activities. Therefore, increased road densities from road construction are not expected to be of a magnitude to increase sedimentation to affected drainages, provided adequate planning for new road

construction is implemented. Forest practices in the area will be conducted to meet the standards of the Idaho Forest Practices Act. These rules are designed to use best management practices that are adapted to and take account of the specific factors influencing water quality, water quality objectives, on-site conditions, and other factors applicable to the site where a forest practice occurs.

### **3.15 Air Quality**

The primary means by which the protection and enhancement of air quality is accomplished is through implementation of National Ambient Air Quality Standards (NAAQS). These standards address six pollutants known to harm human health including ozone, carbon monoxide, particulate matter, sulfur dioxide, lead, and nitrogen oxides (USDA Forest Service 2000).

Smoke emissions from fires potentially affect an area and the airsheds that surround it. Climatic conditions affecting air quality in Southwestern Idaho are governed by a combination of factors. Large-scale influences include latitude, altitude, prevailing hemispheric wind patterns, and mountain barriers. At a smaller scale, topography and vegetation cover also affect air movement patterns. In Elmore County, winds are predominantly from the northwest but occasionally blow from the east to east-southeast. Air quality in the area and surrounding airshed is generally good to excellent. However, locally adverse conditions can result from occasional wildland fires in the summer and fall, and prescribed fire and agricultural burning in the spring and fall. All major river drainages are subject to temperature inversions which trap smoke and affect dispersion, causing local air quality problems. This occurs most often during the summer and fall months and would potentially affect all communities in Elmore County.

Smoke management in Elmore County is facilitated by the Idaho/Montana Airshed Group. This group advises when conditions are appropriate for prescribed burning based on information participating members (burners) supply to them. The southern half of the county is in Airshed Unit 22, and about half is in Airshed Unit 21 (the northern portion), with smaller sections to the east in Airshed Units 24 and 25. It's bordered to the west by the Boise Impact Area: Montana/Idaho Airshed Group Operating Guide (Levinson 2002). An airshed is a geographical area which is characterized by similar topography and weather patterns (or in which atmospheric characteristics are similar, e.g., mixing height and transport winds). The USDA Forest Service, Bureau of Land Management, and the Idaho Department of Lands are all members of the Montana/Idaho State Airshed Group, which is responsible for coordinating burning activities to minimize or prevent impacts from smoke emissions. Prescribed burning must be coordinated through the Missoula Monitoring Unit, which coordinates burn information, provides smoke forecasting, and establishes air quality restrictions for the Montana/Idaho Airshed Group. The Monitoring Unit issues daily decisions which may restrict burning when atmospheric conditions are not conducive to good smoke dispersion. Burning restrictions are issued for airsheds, impact zones, and specific projects. The monitoring unit is active March through November. Each Airshed Group member is also responsible for smoke management all year.

The Clean Air Act, passed in 1963 and amended in 1977, is the primary legal authority governing air resource management. The act established a process for designation of Class I and Class II areas for air quality management. Class I areas receive the highest level of protection and numerical thresholds for pollutants are most restrictive for this Class.

All of the communities within Elmore County could be affected by smoke or regional haze from burning activities in the region. Idaho Department of Environmental Quality maintains Air Pollution Monitoring Sites throughout Idaho. The Air Pollution Monitoring program monitors all of the six criteria pollutants. Measurements are taken to assess areas where there may be a

problem, and to monitor areas that already have problems. The goal of this program is to control areas where problems exist and to try to keep other areas from becoming problem air pollution areas (Louks 2001).

The Clean Air Act provides the principal framework for national, state, and local efforts to protect air quality. Under the Clean Air Act, OAQPS (Organization for Air Quality Protection Standards) is responsible for setting standards, also known as national ambient air quality standards (NAAQS), for pollutants which are considered harmful to people and the environment. OAQPS is also responsible for ensuring these air quality standards are met, or attained (in cooperation with state, Tribal, and local governments) through national standards and strategies to control pollutant emissions from automobiles, factories, and other sources (Louks 2001).

### **3.15.1 Fire Mitigation Practices to Maintain Air Quality**

Vehicle use associated with forest thinning operations or range management activities can increase fugitive dust levels on the access roads. To mitigate for any potential increase, activity management may require that the maximum speed limit for work trucks be limited to 35 MPH during hauling operations associated with fuels mitigation when the roads produce dust from traffic. However, the remoteness of forestry and rangeland operations from population centers in Elmore County would mitigate this need substantially.

Smoke consists of dispersed airborne solids and liquid particles, called particulates, which can remain suspended in the atmosphere for a few days to several months. Particulates can reduce visibility and contribute to respiratory problems. Very small particulates can travel great distances and add to regional haze problems. Regional haze can sometimes result from multiple burn days and/or multiple owners burning within an airshed over too short a period of time to allow for dispersion.

For prescribed fires, there are three principle strategies to manage smoke and reduce air quality effects. They include:

1. **Avoidance** - This strategy relies on monitoring meteorological conditions when scheduling prescribed fires to prevent smoke from drifting into sensitive receptors, or suspending burning until favorable weather (wind) conditions exist. Sensitive receptors can be human-related (e.g. campgrounds, schools, churches, and retirement homes) or wildlife-related (threatened and endangered species and their critical habitats);
2. **Dilution** – This strategy ensures proper smoke dispersion in smoke sensitive areas by controlling the rate of smoke emissions or scheduling prescribed fires when weather systems are unstable, not under conditions when a stable high-pressure area is forming with an associated subsidence inversion. An inversion would trap smoke near the ground; and
3. **Emission Reduction** – This strategy utilizes techniques to minimize the smoke output per unit area treated. Smoke emission is affected by the number of acres burned at one time, pre-burn fuel loadings, fuel consumption, and the emission factor. Reducing the number of acres burned at one time would reduce the amount of emissions generated by that burn. Reducing the fuel beforehand reduces the amount of fuel available. Prescribed burning when fuel moistures are high can reduce fuel consumption. Emission factors can be reduced by pile burning or by using certain firing techniques such as mass ignition.

If weather conditions changed unexpectedly during a prescribed burn, and there was a potential for violating air quality standards or for adverse smoke impacts on sensitive receptors (schools, churches, hospitals, retirement homes, campgrounds, wilderness areas, and species of

threatened or endangered wildlife), the management organization may implement a contingency plan, including the option for immediate suppression. Considering 1) the proposed action would result in prescribed fire on a relatively small number of acres, 2) burning as part of this mitigation plan's implementation in the County will most likely occur over a 5-year or 10-year period at a minimum, and 3) the County will adhere to Montana/Idaho Airshed Group advisories and management strategies to minimize smoke emissions, prescribed fire activities would not violate national or state emission standards and would cause very minor and temporary air quality impacts. The greatest threat to air quality would be smoke impacts on sensitive receptors, however, the scarcity of sensitive receptors within the County minimizes this potential air quality impact.

In studies conducted through the Interior Columbia Basin Management Project, smoke emissions were simulated across the Basin to assess relative differences among historical, current, and future management scenarios. In assessing the whole Upper Columbia Basin, there was a 43 percent reduction in smoke emissions between the historical and current periods (Quigley and Arbelbide 1997). The projected smoke emissions varied substantially with the vastly different management scenarios. The consumptive demand and passive management scenarios were projected to substantially increase smoke emissions above current levels. The active management scenarios were projected to result in a decrease of current levels.

Although prescribed fire smoke would occur more frequently than wildland fire smoke, since prescribed fires are scheduled during the year, the effects of wildland fire smoke on visibility are more acute. Prescribed fires produce less smoke than wildland fires for comparatively shorter periods, because they are conducted under weather conditions that provide for better smoke dispersion. In a study conducted by Holsapple and Snell (1996), wildland fire and prescribed fire scenarios for the Columbia Basin were modeled. In conclusion, the prescribed fire scenarios did not exceed the EPA particulate matter (PM 10) standard in a 24-hour period. Similar projections were observed for a PM 2.5 threshold. Conversely, all wildland fire scenarios exceeded air quality standards. Similar responses were reported by Huff *et al.* (1995) and Ottmar *et al.* (1996) when they compared the effects of wildland fire to prescribed fire on air quality. The impacts of wildland fire and management ignited prescribed fire on air quality vary because of the differences in distribution of acres burned, the amount of fuel consumed per acre (due to fuel moisture differences), and the weather conditions in which typical spring and fall prescribed burns occur. This analysis reveals wildland fire impacts on air quality may be significantly greater in magnitude than emissions from prescribed burns. This may be attributable, in part, to the fact that several states within the project area have smoke management plans requiring favorable weather conditions for smoke dispersion prior to igniting wildland fires (Quigley and Arbelbide 1997).

### **3.15.2 Elmore County's Comprehensive Plan Coordination**

The Elmore County Comprehensive Plan addresses air quality directly. The findings from that effort are detailed here:

#### **Air Quality Goal 1** *(from the Elmore County Comprehensive Plan)*

To protect air quality levels and to ensure that future air quality levels meet or exceed state and/or federal standards.

#### **Air Quality Objectives** *(from the Elmore County Comprehensive Plan)*

1. Encourage types of economic development in the County, which can manage pollution to ensure a clean environment.

2. Evaluate proposed land uses in relation to air circulation patterns and adjoining land uses.
3. Encourage heavy industrial uses to locate in the Simco Road District.
4. Locate industries, which generate fumes, gasses, odors, and particulate discharge in areas of the County where air quality can be managed and protected for area residents.
5. Detailed engineering studies and technical analysis will be required on any heavy industrial activities in the County.
6. Require dust control and dust abatement actions in communities where dust issues are present.

Of these goals and objectives, the last of these is specifically addressed in this planning effort and is integrated by this reference. Although not specifically referenced by wildland fire generated smoke emissions, objective #2 relates specifically to managing smoke emissions through the Montana/Idaho Airshed Group.

## Chapter 4: Summaries of Risk and Preparedness

### 4 Overview

#### 4.1 Wildland Fire Characteristics

An informed discussion of fire mitigation is not complete until basic concepts that govern fire behavior are understood. In the broadest sense, wildland fire behavior describes how fires burn; the manner in which fuels ignite, how flames develop and how fire spreads across the landscape. The three major physical components that determine fire behavior are the fuels supporting the fire, the topography in which the fire is burning, and the weather and atmospheric conditions during a fire event. At the landscape level, both topography and weather are beyond our control. We are powerless to control winds, temperature, relative humidity, atmospheric instability, slope, aspect, elevation, and landforms. It is beyond our control to alter these conditions, and thus impossible to alter fire behavior through their manipulation. When we attempt to alter how fires burn, we are left with manipulating the third component of the fire environment, the fuels which support the fire. By altering fuel loading and fuel continuity across the landscape, we have the best opportunity to determine how fires burn.

A brief description of each of the fire environment elements follows in order to illustrate their effect on fire behavior.

##### 4.1.1 Weather

Weather conditions are ultimately responsible for determining fire behavior. Moisture, temperature, and relative humidity ultimately determine the rates at which fuels dry and vegetation cures, and whether fuel conditions become dry enough to sustain an ignition. Once conditions are capable of sustaining a fire, atmospheric stability and wind speed and direction can have a significant affect on fire behavior. Winds fan fires with oxygen, increasing the rate at which fire spreads across the landscape. Weather is the most unpredictable component governing fire behavior, constantly changing in time and across the landscape.

##### 4.1.2 Topography

Fires burning in similar fuel conditions burn dramatically different under different topographic conditions. Topography alters heat transfer and localized weather conditions, which in turn influence vegetative growth and resulting fuels. Changes in slope and aspect can have significant influences on how fires burn. Generally speaking, north slopes tend to be cooler, wetter, more productive sites. This can lead to heavy fuel accumulations, with high fuel moistures, later curing of fuels, and lower rates of spread. The combination of light fuels and dry sites lead to fires that typically display the highest rates of spread. In contrast, south and west slopes tend to receive more direct sun, and thus have the highest temperatures, lowest soil and fuel moistures, and lightest fuels. These slopes also tend to be on the windward side of mountains. Thus these slopes tend to be “available to burn” a greater portion of the year.

Slope also plays a significant roll in fire spread, by allowing preheating of fuels upslope of the burning fire. As slope increases, rate of spread and flame lengths tend to increase. Therefore, we can expect the fastest rates of spread on steep, warm south and west slopes with fuels that are exposed to the wind.

### **4.1.3 Fuels**

Fuel is any material that can ignite and burn. Fuels describe any organic material, dead or alive, found in the fire environment. Grasses, brush, branches, logs, logging slash, forest floor litter, conifer needles, and home sites (the structures) are all examples. The physical properties and characteristics of fuels govern how fires burn. Fuel loading, size and shape, moisture content and continuity and arrangement all have an affect on fire behavior. Generally speaking, the smaller and finer the fuels, the faster the potential rate of fire spread. Small fuels such as grass, needle litter and other fuels less than a quarter inch in diameter are most responsible for fire spread. In fact, “fine” fuels, with high surface to volume ratios, are considered the primary carriers of surface fire. This is apparent to anyone who has ever witnessed the speed at which grass fires burn. As fuel size increases, the rate of spread tends to decrease, as surface to volume ratio decreases. Fires in large fuels generally burn at a slower rate, but release much more energy, and burn with much greater intensity. This increased energy release, or intensity, makes these fires more difficult to control. Thus, it is much easier to control a fire burning in grass than to control a fire burning in timber.

When burning under a forest canopy, the increased intensities can lead to torching (single trees becoming completely involved) and potentially development of crown fire. That is, they release much more energy. Fuels are found in combinations of types, amounts, sizes, shapes, and arrangements. It is the unique combination of these factors, along with the topography and weather, which determine how fires will burn.

The study of fire behavior recognizes the dramatic and often-unexpected affect small changes in any single component has on how fires burn. It is impossible to speak in specific terms when predicting how a fire will burn under any given set of conditions. However, through countless observations and repeated research, the some of the principles that govern fire behavior have been identified and are recognized.

## **4.2 Elmore County Conditions**

Elmore County is characterized by a persistently warm and arid environment, that limits non-cultivated vegetative communities to grass and brush rangelands. Xeric vegetation and hot, dry and windy conditions has resulted in a rich fire history, with relatively frequent fires. The last decade has seen the proliferation of Cheatgrass, an exotic grass species that is able to out-compete native bunchgrasses. Cheatgrass responds well to soil disturbance and is found in abundance along roadsides, driveways, new construction areas, and in recently burned areas. Over time, vegetative species composition in unmanaged or non-irrigated land has shifted toward fire prone species, particularly in high use areas where disturbance is common.

Elmore County has been experiencing some growth, particularly in and around Mountain Home. At the same time, the number and value of resources at risk is on the increase, as more and more homes are built in the midst of cured, fire-ready fuels. Human use is strongly correlated with fire frequency, with increasing numbers of fires as use increases. The combination frequent ignitions and flammable vegetation has greatly increased the probability that incendiary devices will find a receptive fuel bed, resulting in increased fire frequency. Discarded cigarettes, tire fires, and hot catalytic converters have increased the number of fires experienced along roadways. Careless and unsupervised use of fireworks also contributes their fair share to unwanted and unexpected wildland fires. Further contributing to ignition sources are the debris burners and “sport burners” who use fire to rid ditches of weeds and other burnable materials. Ignitions along Interstate 84 continue to be the leading source of human caused ignitions in the county.



Fire departments within Elmore County have reported a general increase in the number of fires within the county. Although there have been few homes lost to wildland fires in the recent past, the potential is growing. Fire departments feel as though pure luck has been on the side of many homeowners, as more and more fires seem to be controlled at the doorstep of residents' homes. It is quite probable that homes will eventually be lost to wildland fire. However, there are a number of actions that can be taken now that can decrease the probability that these events will occur.

## **4.2.1 County Wide Potential Mitigation Activities**

There are four basic opportunities for reducing the loss of homes and lives to fires. There are many single actions that can be taken, but in general they can be lumped into one of the following categories:

- Prevention
- Education/ Mitigation
- Readiness
- Building Codes

### **4.2.1.1 Prevention**

The safest, easiest, and most economical way to mitigate unwanted fires is to stop them before they start. Generally, prevention actions attempt to prevent human-caused fires. Campaigns designed to reduce the number and sources of ignitions can be quite effective. Prevention campaigns can take many forms. Traditional "Smokey Bear" type campaigns that spread the message passively through signage can be quite effective. Signs that remind folks of the dangers of careless use of fireworks, burning when windy, and leaving unattended campfires can be quite effective. It's impossible to say just how effective such efforts actually are, however the low costs associated with posting of a few signs is inconsequential compared to the potential cost of fighting a fire.

Slightly more active prevention techniques may involve mass media, such as radio or the local newspaper. Fire districts in other counties have contributed the reduction in human-caused ignitions by running a weekly "run blotter," similar to a police blotter, each week in the paper. The blotter briefly describes the runs of the week and is followed by a weekly "tip of the week" to reduce the threat from wildland and structure fires. The federal government has been a champion of prevention, and could provide ideas for such tips. When fire conditions become high, brief public service messages could warn of the hazards of misuse of fire or any other incendiary device. Such a campaign would require coordination and cooperation with local media outlets. However, the effort is likely to be worth the efforts, costs and risks associated with fighting unwanted fires.

*Fire Reporting:* Fires cannot be suppressed until they are detected and reported. As the number and popularity of cellular phones has increased, expansion of the #FIRE program throughout Idaho may provide an effective means for turning the passing motorist into a detection resource.

*Burn Permits:* The issues associated with debris burning during certain times of the year are difficult to negotiate and enforce. However, there are significant risks associated with the use of fire adjacent to expanses of flammable vegetation under certain scenarios. Fire departments typically observe the State of Idaho Closed fire season between May 20 to October 20. During this time, an individual seeking to conduct an open or any type shall obtain a permit to prescribed the conditions under which the burn can be conducted and the resources that need to be on hand to suppress the fire, from a State of Idaho fire warden. Although this is a state-

wide regulation, compliance and enforcement has been variable between fire districts. Tackling this issue is difficult. Typically, the duty falls to the chief of whichever fire protection district the burning is planned for. However, this leads to an increased burden on the fire chiefs, who are already juggling other department obligations with obligations to work and to home. There is also considerable confusion on the part of the public as to when a permit is necessary and the procedure for which to obtain the permit. The best-intentioned citizen may unknowingly break this law for a lack of understanding. Clearly, there is a need to coordinate this process and educate the public as when a permit is needed and the necessary channels to obtain a permit.

#### **4.2.1.2 Education**

Once a fire has started and is moving toward home or other values resource, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics of the home as to whether the home will survive the passing fire front. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event.

The majority of the uncultivated vegetation in Elmore County is comprised of grass and brush rangeland. Although these fuels are very flammable and can support very fast moving fires, fires in these fuel types tend to be of relatively low intensity. In many cases, homes can easily be protected by following a few simple guidelines that reduce the ignitability of the home. There are multiple programs such as FIREWISE that detail precautions that should be taken in order to reduce the threat to homes, such as clearing cured grass and weeds away from structures and establishing a green zone around the home.

However, knowledge is no good unless acted upon. Education needs to be followed up by action. Any education programs should include an implementation plan. Ideally, funds would be made available to financially assist the landowner making the necessary changes to the home. The survey of the public conducted during the preparation of this WUI Fire Mitigation Plan indicated that approximately 62% of the respondents are interested in participating in this type of an activity.

#### **4.2.1.3 Readiness**

Once a fire has started, how much and how large it burns is often dependent on the availability of suppression resources. In most cases, rural fire departments are the first to respond and have the best opportunity to halt the spread of a wildland fire. For many districts, the ability to reach these suppression objectives is largely dependent on the availability of functional resources and trained individuals. Increasing the capacity of departments through funding and equipment acquisition can improve response times and subsequently reduce the potential for resource loss.

In order to assure a quick and efficient response to an event, emergency responders need to know specifically where emergency services are needed. Continued improvement and updating of the rural addressing system is necessary to maximize the effectiveness of a response.

#### **4.2.1.4 Building Codes**

The most effective, all be it contentious, solution to some fire problems is the adoption of building codes in order to assure emergency vehicle access and home construction that does not “invite” a fast and intense house fire. Codes that establish minimum road construction standards and access standards for emergency vehicles are an effective means of assuring

public and firefighter safety, as well as increasing the potential for home survivability. County building inspectors should look to the fire departments in order to assure adequate minimum standards. Fire districts may want to consider apparatus that may be available during mutual aid events in order that the adopted standards meet the access requirements of the majority of suppression resources. In Elmore County, such standards may be drafted in consultation with the Fire Chiefs in order to assure accessibility is possible for all responding resources.

Coupled with this need is the potential to implement a set of requirements or recommendations to specify construction materials allowed for use in high risk areas of the county. While a resident of Chattin Flats may not put his or her structure at undue risk by the use of wooden decking materials, a shake roof, or wooden siding, the same structure in Atlanta would be at tremendous risk through this practice. The Elmore County Commissioners may want to consider a policy for dealing with this situation into the future as more and more homes are located in the wildland-urban interface.

### **4.3 Elmore County’s Wildland-Urban Interface**

Individual community assessments have been completed for all of the populated places in the county. The following summaries include these descriptions and observations. Local place names identified during this plan’s development include:

**Table 4.1. Elmore County Communities**

<b>Community Name</b>	<b>Planning Description</b>	<b>Vegetative Community</b>	<b>National Register Community At Risk?<sup>1</sup></b>
Atlanta	Community	Forestland	Yes
Dixie	Community	Forestland / Rangeland	No
Featherville	Community	Forestland	Yes
Glenns Ferry	City	Rangeland	Yes
Grand View / Chattin Flats	Community	Rangeland	Yes
Hammett	Community	Rangeland	Yes
King Hill	Community	Rangeland	Yes
Mayfield	Community	Rangeland	Yes
Mountain Home	City	Rangeland	Yes
Oasis	Community	Rangeland	No
Pine	Community	Forestland	Yes
Prairie	Community	Forestland / Rangeland	Yes
Tipanuk	Community	Rangeland	No

<sup>1</sup>Those communities with a “Yes” in the National Register Community at Risk column are included in the Federal Register, Vol. 66, Number 160, Friday, August 17, 2001, as “Urban Wildland Interface Communities within the vicinity of Federal Lands that are at high risk from wildfires”. All of these communities have been evaluated as part of this plan’s assessment.

Site evaluations on these communities are included in subsequent sections. The results of FEMA Hazard Severity Forms for each community are presented in Appendix II.

## **4.3.1 Mitigation Activities Applicable to all Communities**

### **4.3.1.1 Homesite Evaluations and Creation of Defensible Space**

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Current management of the vegetation surrounding homes provides good protection; however, maintaining a lean, clean, green zone within 100 feet of structures to reduce the potential loss of life and property is recommended. Assessing individual homes in the outlying areas can address the issue of escape routes and home defensibility characteristics. Educating the homeowners in techniques for protecting their homes is critical in these hot, dry environments.

### **4.3.1.2 Travel Corridor Fire Breaks**

Ignition points are likely to continue to be concentrated along the roads and railway lines that run through the county. These travel routes have historically served as the primary source of human-caused ignitions, particularly along Interstate 84. In areas with high concentrations of resource values along these corridors, plow or disk lines may be considered in order to provide a fire break in the event of a roadside ignition. By passage with a disk parallel to an access route can provide an adequate control line under normal fire conditions.

Alternatively, permanent fuel breaks can be established in order to reduce the potential for ignitions originating from the highway to spread into the surrounding lands. Application of a cheatgrass-specific herbicide such as Plateau followed by replanting with fire-retardant grass species such as Crested Wheatgrass would can provide a longer-term firebreak.

In combination with these efforts, or in place of these efforts, concentrated livestock grazing within a corridor paralleling these travel routes is suggested; especially along Interstate 84. This effort will require a cooperation between landowners, land managers, the Elmore County Cattlemen's Association, and individual ranchers to accomplish. In practice, this recommendation will necessitate the construction of temporary or permanent fencing outside of the right-of-way adjacent to the highway, parallel to the existing fence line which parallels the interstate, approximately 500 feet to 1,000 feet away (or more). By segmenting the corridor into smaller units (½ mile to 1 mile long), intensive cattle grazing of the fine fuels in this area during the late spring and summer may reduce the probability of human created ignitions (and lightning ignited fires) from spreading rapidly to the rangeland where cities, towns, and communities (people) are located. This option will require ranchers to supplement feed, to truck water and to manage water-troughs intensively by moving them as the browse (fine fuels) is removed.

This latter option is not without potential negative impacts. Some have suggested that cattle may introduce or increase the spread of noxious weeds, have negative impacts on riparian areas, or negatively impact certain threatened or endangered species. Obviously, these concerns need to be addressed during the implementation of this type of fuels mitigation treatment. Also, it is important to note that this type of treatment has not specifically been researched as a fire mitigation tool. That fact, however, does not negate the empirical observations of many land managers who have observed (and fought) wildfires in rangelands where livestock graze and a decrease in intensity and even the rate of fire spread is seen. We urge willing land owners and willing ranchers to cooperate in this effort to ascertain if this wildland fire mitigation treatment is a feasible treatment option or not.

#### **4.3.1.3 Power Line Corridor Fire Breaks**

The treatment opportunities specified for travel corridor fire breaks apply equally for power line corridors. The obvious difference between the two is that the focus area is not an area parallel to and adjacent to the road, but instead focuses on the area immediately below the infrastructure element. Protection under the high tension power lines maintained by Idaho Power is strongly recommended. This may be a just the right place to test intensive livestock grazing practices as a tool for reducing fine fuels around significant infrastructure.

### **4.4 Rangeland Communities in Elmore County**

Communities of Oasis, Tipnuk, Mountain Home, Grand View, Hammet, Glens Ferry, King Hill.

#### **4.4.1 Vegetative Associations**

These communities lie in the vegetative ecosystem known as the “sagebrush steppe” community. The Sagebrush Steppe Ecosystem is widespread over much of southern Idaho, eastern Oregon and Washington, and portions of northern Nevada, California and Utah. The southern Idaho portion of this ecosystem occurs over a variety of land forms and vegetation types. Native vegetative communities range from vast expanses of grasslands resulting from recent fires, to old-growth sagebrush communities.

The steppe is characterized by a persistently warm and arid environment, that limits non-cultivated vegetative communities to grass and brush rangelands. Xeric vegetation and hot, dry and windy conditions has resulted in a rich fire history, with relatively frequent fires. The last decade has seen the proliferation of Cheatgrass (*Bromus tectorum L.*), an exotic grass species that is able to out-compete native bunchgrasses. Cheatgrass responds well to soil disturbance and is found in abundance along roadsides, driveways, new construction areas, and in recently burned areas. Over time, vegetative species composition in unmanaged or non-irrigated land has shifted toward fire prone species, particularly in high use areas where disturbance is common.

Agricultural and irrigation practices surrounding some communities within the Snake River Valley have created a patchwork of green, lush vegetation and cured rangeland. This patchwork helps to break the continuity of fuels that are available to burn. This pattern is particularly apparent around Grand View, Hammett, and Glens Ferry. Cultivation has also broken fuel continuity in areas surrounding Mountain Home. However, dry fuels become continuous above the irrigated zone, providing a consistent fuel bed for fire spread. There is little break in the continuity of fuels surrounding the communities of Oasis and Tipnuk. The majority land outside towns and communities is dominated by xeric vegetation type, with few breaks in continuity. Under dry and windy conditions, fires in these vegetative types can burn thousands of acres in a single burning period.

#### **4.4.2 Overall Fuels Assessment**

Fuels throughout the entire steppe community in Elmore County are quite consistent, dominated by grasslands and sage. Areas dominated by grass with scattered sage can be described as Fuel Models 1 and 2 (FM1 and FM2). Fires in these fuel types tend to be spread rapidly, but burn at relatively low intensity. Where grasses become less consistent, wind is needed to push fires through the bunchgrass. Sage-dominated fuel complexes can be described as FM6. Typically, fires in this fuel type require a moderate wind in order to push the fire through the fuels. Without wind, the fire will drop to the ground. In the absence of fine fuels, fire spread will stop. Wind driven fires in sage will generate relatively large flame lengths and burn with a higher

intensity than fires in FM 1 and 2. However, burn time is short and burned areas cool quickly after passage of the fire front.

Fire behavior and fire regimes have been altered due to the proliferation of cheatgrass. The fine structure and its ability to completely dominate disturbed sites provides a dry, consistent fuel bed for fire. Where the exotic has encroached in sagebrush stands, it now provides a consistent bed of fine fuels that actively carry fire without the effect of wind. Because of these characteristics, cheatgrass will support fire during times of the year and under conditions which native vegetation would not sustain a wildland fire.

Cheatgrass has taken over more than 50% of the nearby Snake River Birds of Prey National Conservation Area, with detrimental effects to native flora and wildlife. Cheatgrass can reduce the fire recurrence interval in sagebrush grasslands dramatically, from 20 to 100 years for a natural cycle, to three to five years on cheatgrass-dominated sites. Continued natural and human-caused disturbances will favor cheatgrass, shifting species composition away from native species toward this highly flammable exotic. As a consequence, the landscape will become increasingly fire prone over time. Fuels surrounding human activities will continue to become increasingly receptive to ignition sources, increasing the frequency of wildland fires that burn with rapid rates of spread, but at relatively low intensities.

**Community Assessments:** The majority of homes and structures within and surrounding these communities are at low risk of loss to wildland fire. The prevalence of light grass and sage fuels pose a low threat to homes surrounded by these fuels, as fire typically spreads quickly and burns at relatively low intensities. However, there are a number of individual homes that are at much higher risk to wildland fire loss in the area, largely due to use of highly ignitable materials in home construction, or by lack of defensible space surrounding the home. Home defensibility practices can dramatically increase the probability of home survivability. The amount of fuel modification necessary will depend on the specific attributes of the site. Considering the high spread rates typical in these fuel types, homes need to be protected prior to fire ignitions, as there is little time to defend a home in advance of a grass and range fire.

### **4.4.3 Individual Community Assessments**

#### **4.4.3.1 Oasis**

Oasis is a small but growing community 25 miles southeast of the Boise. The community is accessed via Desert Winds Road, off Interstate Highway 84 at Exit 74. The community presently consists of roughly 45 homes. The Rancho del Sol Soles Rest Creek Developments offer an additional fifteen or so lots yet to be built. Oasis has recently established a rural fire district for fire protection for the community. Volunteerism within the community has been high, helping to raise awareness of fire hazards in both the home and the wildlands. Because of these characteristics, the overall risk to community of Oasis due to wildland fire is low.

##### **4.4.3.1.1 Fuels Assessment**

Most of the land surrounding the community is sage and grasslands in BLM ownership. Cattle do actively graze on the BLM lands, however this grazing activity does not significantly reduce the fine fuel loading, particularly the fine fuels contributed by the proliferation of cheatgrass. Charred sage stems in the area are evidence of past range fires in the vicinity of the community. These disturbance events have allowed the cheatgrass to dominate, resulting in thick monocultures of the flammable grass. The invasive has also encroached into maturing stands of sage, out competing the native bunch grasses and creating continuous fuel beds that are

capable of supporting fire. These conditions predispose the entire landscape to rapid fire spread. Stagnate stands of dead sagebrush approximately 4 to 5 feet tall are also present due to the lack of the natural fire regime. Historically, sagebrush rangelands would burn relatively frequently at low to moderate intensities; thus, revitalizing the stand and providing for new growth. Due to fire suppression activities over the past few decades, these stands have become unnaturally dense and over mature creating a significantly higher risk of a severe, stand replacing wildfire.

The most likely ignition source in these areas is via the travel corridors. Interstate 84 as well as Desert Winds and Ditto Creek provide the most likely sources of human caused ignition. There has been some treatment along the more traveled routes in the area in the form of plowed fuel breaks immediately adjacent to the roads in order to reduce the potential for a discarded cigarette or other incendiary device to ignite wildland fuels. This treatment is quite effective and should be encouraged.

#### **4.4.3.1.2 Escape**

Desert Winds and the Ditto Creek roads are the primary access route to and from Oasis, providing two routes of escape. A rangeland fire may temporarily cut-off travel on either of these routes or others depending on the direction of fire.

#### **4.4.3.1.3 Infrastructure**

There are a number of high-tension power lines that run through this community. These lines could be at some risk to arcing in the event of a wildland fire. It is also possible that the wooden poles that support the lines could burn, creating significant safety issues and disruption of the power supply.

#### **4.4.3.1.4 Community Risk Assessment**

Overall, the risk of loss due to wildland fire is low. Most of the homes within the community are of recent construction and have utilized some fire-resistant materials. Approximately 50% of the homes in the area have cleared flammable vegetation away from structures to provide a fire break protecting the home against fast-moving grass fires. The above-ground propane tanks observed were also within the defensible space extending from the home, reducing the risk of explosion in the event of a wildland fire. Roads within the area provide marginal access, are typically signed, and are of adequate size to accommodate emergency traffic.

Water availability is always an issue in arid landscapes. No hydrant system is available within the community, instead relying on the water handling capabilities of the fire district. These resources can be quickly exhausted in the event of a fire. Expansion of water handling capability would be an asset to the community.

#### **4.4.3.1.5 Potential Mitigation Activities**

In addition to continued homeowner education and establishment of defensible space, the community may consider the establishment of a network of dry hydrants in order to augment water sources. The Oasis VFD has identified a number of needs in order to bolster its fire fighting capabilities. Aggressively pursuing grants and fire assistant opportunities from the County will likely lead to the development of well-equipped fire department. Members of the Oasis VFD are actively pursuing mitigation activities in accordance with the Firewise program as well as encouraging Oasis residents to perform Firewise activities around their property.

#### **4.4.3.2 Tipanuk**

Tipanuk is community comprised largely of modular and mobile homes, off Ditto Creek Road, immediately adjacent to Interstate 84. Although Tipanuk abuts the Interstate right-of-way, there is no direct access from I-84 to Tipanuk. Access from I-84 is via Exit 74 to the west, or from exit 90 via Old Highway 30 to the east. Tipanuk is located east of Oasis and west of Mountain Home.

There is concentrated ranching activities at Tipnuk Farms on the north side of the community, with grazing in the surrounding BLM lands.

##### **4.4.3.2.1 Fuels Assessment**

The fuels surrounding Tipanuk are primarily grass and sage rangeland fuels, with a significant component of cheatgrass. As in the vicinity of Oasis, it is apparent as to the fire and overall disturbance history of the area. Where disturbance has occurred, cheatgrass tends to dominate, providing consistent grass fuel bed around the entire community. In many cases, these fuels are consistent to residences, providing an avenue for fire spread from the wildland to the home.

##### **4.4.3.2.2 Infrastructure**

As in Oasis, high-tension power lines run through the community. These lines could be compromised in the event of a rangeland fire, although the potential for an event is low.

##### **4.4.3.2.3 Escape**

Ditto Creek to the west and Old Highway to the east provide escape routes from Tipanuk. Again, escape routes would likely only be compromised for a short time because of the short burn times of fires in these fuel types.

##### **4.4.3.2.4 Community Risk Assessment**

Tipanuk is currently does not have any structural fire protection. This significantly increases the overall fire risk to the community. Lack of suppression resources increases the potential for small wildland fires to grow, as well as for fires to spread from structures to the wildlands. Because of this, the potential risk of loss to any fire event is high.

A number of homes have more than adequate defensible space surrounding the home, particularly where cattle or horses are allowed to graze up to the home, or where landscaping techniques keep fuels trimmed. However, there are multiple homes that have little to no defensible space. As mentioned, Tipanuk is comprised primarily of mobile homes. Although the aluminum siding typically used on the exterior of mobile homes is quite fire resistant, this resistance is undermined if skirted with flammable materials, or if skirting is absent all together. This is particularly true when dried fuels and other combustible refuse are present along the exterior.

The greatest ignition potential is from roadways running through the community, namely Ditto Creek Road and Interstate 84. The flammable cheatgrass adjacent to these corridors is highly receptive of incendiaries. Also, human activities such as welding and trash burning provide ample ignition sources in these highly flammable environments. Fires in these fuels spread rapidly, especially when driven by wind (*which is generally blowing in this area*). This further increases the importance of creating defensible space around homes and outbuildings.



#### **4.4.3.2.5 Potential Mitigation Activities**

It is strongly recommended that Tipanuk seek incorporation into a fire district for basic fire suppression services. This would greatly reduce the threat to the community. Without basic structural fire protection, all other mitigation activities may be without impact. Often, fuels mitigation activities slow a fire's advance or reduce its intensity long enough for rural or city fire protection to arrive. Without the services of a rural fire department in Tipanuk, additional treatments will only have marginal impacts. It may, however, provide for protection of people living in those homes, giving them enough time to evacuate. On that basis alone, mitigation treatments are justified and recommended.

This community should also consider establishing dry hydrants or other water sources to assure adequate water supply for fire suppression. Due to the current lack of suppression resources, residents should take extra precautions to protect their property. Homeowner education and creation of defensible space should be emphasized.

#### **4.4.3.2.6 Coordination with the Comprehensive Plan**

The Elmore County Comprehensive Growth Plan (2004) details the following General Statements of Community goals for Tipanuk. These goals are incorporated into this plan and are consistent with this intent of this planning effort.

6. **Natural Resources** - Protect all waterways and drains within the Tipanuk Area from incompatible land use encroachment and development. Support advanced wildfire-fighting capability to protect the area from wildfire damage. Re-vegetation to occur after all wildfires.
7. **Hazardous Areas** - In any area deemed hazardous by County Officials, require a Conditional Use Permit procedure as a method of controlling or limiting development.
8. **Public Services, Facilities and Utilities** - Continue to expand the electrical systems to get three-phase power throughout the community and outlying areas at reasonable cost. Support expansion of the Oasis Volunteer Wildland Fire District to include all of the Tipanuk Area Community. Continue efforts to organize volunteers for the Oasis Wildland Fire District. Create an approved centralized community solid waste collection facility.

#### **4.4.3.3 Mountain Home**

Mountain Home is the largest community in Elmore County, with over 10,000 residents. The primary access is via Interstate 84 from the east or west, Highway 20 from the north and Highway 51 from the south. Mountain home is home to the Mountain Home Air Force Base, located 12 miles south of the city center on Highway 51.

##### **4.4.3.3.1 Fuels Assessment**

Fuels surrounding Mountain Home are primarily dominated by grass and sage plant communities. Agriculture and ranching activities increase to the west of town, breaking up the natural continuity of the fuels. The fuels west of North Main Street (Business I-84) in the vicinity of Simplot Feed Terminal are dominated by continuous expanses of mature sage. A wind-driven fire in these fuels would produce large flame lengths and relatively high intensities. However, these fuels are largely isolated from any homes. The feed terminal itself has adequate defensible space to protect it in the event of a wildland fire. To the south and north, fuels are primarily grass with a lesser component of sage.

#### **4.4.3.3.2 Escape**

There are multiple escape routes from most homeowners, visitors, and ranches on the outskirts of Mountain Home. It is unlikely that the main travel routes would be compromised for any duration of time in the event of a wildland fire.

#### **4.4.3.3.3 Infrastructure**

The Evander Andrews Power Complex and transfer station are located to the north and west of Mountain Home. Also in this vicinity is the Holly Corporation fuel transfer depot. Although there are some wildland fuels surrounding these important sites, the facilities have adequate defensible space, with little direct threat posed by wildland fire.

#### **4.4.3.3.4 Community Risk Assessment**

The overall risk of casualty loss to Mountain Home is relatively low. However, like many areas throughout the west, Elmore County and Mountain Home has been experiencing some growth in recent years. The number and value of resources at risk continues to increase, as more and more homes are built in the midst of cured, fire-ready fuels.

Larger communities such as Mountain Home often see the most significant threats from wildfire along the perimeter of the community. This is not always the case in smaller communities where a house fire can spread to the surrounding wildland fuels and then back to threaten adjacent homes. The majority of homes along the periphery of Mountain Home have adequate defensible space, with some exceptions. The majority of homes have also been built using fire-resistant materials, further reducing the threat of home loss.

The Mountain Home City/Rural Fire Department provides fire protection for the community. The Department maintains four stations in Mountain Home. Fire protection for the Mountain Home Air Force Base is provided on site through the Mountain Home Air Fire Base Fire Department.

As is typical throughout the dry uplands throughout Elmore County, water availability is limited in the areas outside of Mountain Home. No hydrant system was observed north of I-84 or outside city limits west of town. Surface water also appears scarce, with the Mountain Home Reservoir completely dry in all but the wettest seasons.

The greatest ignition potential in the vicinity of Mountain Home is associated with the roads and travel corridors. Also adding to the potential are other human ignition sources, such as fireworks, debris burning, welding and such.

#### **4.4.3.3.5 Potential Mitigation Activities**

In Addition to the mitigation activities previously presented, officials should consider establishment of additional dry hydrants or expanding the existing hydrant system. Water storage in this area is comparatively limited during the peak of the wildfire season and would be greatly improved by storage tanks located strategically around the outskirts of the community, with links to the dry-hydrant system. In this way, water could be supplied to the lines as needed during fire emergencies without maintaining all of the water lines, all the time.

Additionally, home building codes should be expanded to include building materials in the highest risk areas for wildland fire, as it appears as though growth will continue in and around Mountain Home.

#### **4.4.3.3.6 Coordination with the Comprehensive Plan**

The Elmore County Comprehensive Growth Plan (2004) details the following General Statement of Community goals for Mountain Home. These goals are incorporated into this plan and are consistent with this intent of this planning effort.

7. **Hazardous Areas** - In any area deemed hazardous by County Officials, require a Conditional Use Permit procedure as a method of controlling or limiting development.

#### **4.4.3.4 Chattin Flats / Grand View**

The communities of Chattin Flats and Grand View are accessed via Highway 51 from Mountain Home, or from Highway 78 south of the Snake River. Grand View proper is south of the Snake River, in Owyhee County. Chattin Flats is located in Elmore County, north of the Snake River. The Grand View VFD provides protection to the Simplot Feed Lot at the bottom of Chattin Hill, south to the river. Chattin Flats is the only concentration of residential structures in the area, with a few other ranch homes scattered throughout the river valley.

##### **4.4.3.4.1 Fuels Assessment**

Native fuels are isolated to the Ted Trueblood Wildlife Management Area adjacent to the Snake River. This area is completely surrounded by roads as well as by irrigated and grazed lands. As such, this area does not pose any threat to homes or infrastructure. This area is a characteristic "occluded" wildland fuels situation.

There is little to no threat to the homes in Chattin Flats or the remainder of the valley from wildland fire. The grazing and irrigation of the valley bottom essentially excludes the potential for wildland fire. Thus, there is no threat to homes, infrastructure, or to transportation routes.

##### **4.4.3.4.2 Potential Mitigation Activities**

No activities are necessary for the area.

##### **4.4.3.4.3 Coordination with the Comprehensive Plan**

The Elmore County Comprehensive Growth Plan (2004) details the following General Statements of Community goals for Chattin Flats. These goals are incorporated into this plan and are consistent with this intent of this planning effort.

6. **Natural Resources** - Promote the Snake River as a "working river" and continue a multiple use management policy. Protect the Chattin Flats rural and community areas from incompatible land use encroachment and development to preserve natural land resources.
7. **Hazardous Areas** - In any area deemed hazardous by County Officials, require a Conditional Use Permit procedure as a method of controlling or limiting development.

#### **4.4.3.5 Glenss Ferry, Hammett and King Hill**

Both Glenss Ferry and Hammett lie on the banks of the Snake River, south of I-84. King Hill lies to the north of Glenss Ferry, on the Snake River, off Old Highway 30. The majority of land

surrounding these communities agricultural or ranching land. Because of the similarity of these communities, they will be discussed together.

#### **4.4.3.5.1 Fuels Assessment**

As mentioned, most land surrounding these communities is pasture or irrigated farmland. The native fuels that do exist are relatively isolated, posing little direct threat to structures or infrastructure within the communities. The overall threat to loss from wildland fire to these communities is low.

To the north of each community are vast expanses of rangeland dominated by grass and sage. The Snake River Valley is frequently subject to high winds. The combination of high winds and flammable rangeland fuels have the potential to generate large, extensive range fires covering thousands of acres. Although these fires pose little direct threat to communities, such fires can significantly impact available grazing land.

#### **4.4.3.5.2 Infrastructure**

High-tension power lines run to the north of both Hammett and Glens Ferry. These lines could be compromised in the event of a rangeland fire, although the potential for such an event is low. Mitigation activities consistent with the recommendation discussed above would be warranted.

#### **4.4.3.5.3 Escape**

All three communities are accessed via multiple travel routes. There is little potential for residents to be cut-off from all escape routes simultaneously.

#### **4.4.3.5.4 Community Assessment**

Glens Ferry City/ King Hill Rural Fire Department provides structural fire protection for the two communities. The Lower Snake River BLM staffs an additional wildland engine at Hammett. The combined influence of the agricultural activity, the topographic position of the communities, and light fuel loading, produce an area that is at little risk to casualty loss due to a wildfire. Most homes are buffered by either irrigated farm or pastureland, or by green grass that provides an adequate buffer from rangeland fires.

#### **4.4.3.5.5 Potential Mitigation Activities**

In addition to the mitigation activities applicable to all communities, these communities should consider improving drafting sites along the Snake River. This may reduce the turn-around time for reloading water tenders, increasing fire-fighting effectiveness. The precise specifications of drafting sites will be dictated by existing equipment and equipment potentially acquired in the near future.

#### **4.4.3.5.6 Coordination with the Comprehensive Plan**

The Elmore County Comprehensive Growth Plan (2004) details the following General Statement of Community goals for King Hill, Hammett, and Glens Ferry. These goals are incorporated into this plan and are consistent with this intent of this planning effort.

7. **Hazardous Areas** - In any area deemed hazardous by County Officials, require a Conditional Use Permit procedure as a method of controlling or limiting development.

## **4.5 Forestland Communities of Elmore County**

This section includes assessments for the communities of Atlanta, Dixie, Featherville, Pine, and Prairie.

### **4.5.1 Vegetative Associations**

Vegetative structure and composition within the northern half of Elmore County is closely related to elevation, aspect and precipitation. Warm and dry environments characterize the undulating topography of the region which transitions from the sage steppe plant communities of the south to the forested ecosystems of the north. These conditions limit the establishment of woody tree species, allowing for the dominance of sage and bunchgrass communities. These vegetative communities contain high fuel accumulations that burn rapidly at relatively low to moderate intensities. These fuel types are common in central Elmore County, especially around Prairie and where the Foot Hills fire ravaged. This “transition zone” sometimes experiences extreme fires as moisture and temperatures can combine to stress forest tree species while allowing sagebrush and bunch grasses to grow thick and tall. This combination can lead to extreme fire behavior.

At higher elevations and in the mountainous river canyons, moisture becomes less limiting due to a combination of higher precipitation and reduced solar radiation. Vegetative patterns begin to show a shift toward forested communities dominated by ponderosa pine and Douglas-fir at the lower elevations, transitioning to lodgepole pine and subalpine species at the highest elevations. The forested conditions possess a greater quantity of both dead and down fuels as well as live fuels. Rates of fire spread tend to be lower than those in the grass and shrub lands, however, intensities can escalate dramatically, especially under the effect of slope and wind. These conditions can lead to control problems and potentially threaten lives, structures and other valued resources.

Between the shrub and grass communities and the forested lands is a transitional area that has components of both vegetative communities. These warm and dry forests have an abundance of highly flammable vegetation and open stand conditions. These attributes allow for rapid fire spread through the surface fuels, with fuel concentrations resulting in dramatic increases in intensity. These areas are valued for their scenic qualities as well as for their proximity to travel corridors. These attributes have led to increased recreational home development and residential home construction in these areas. The juxtaposition of highly flammable forest types and rapid home development will continue to challenge the ability to manage wildland fires in the wildland-urban interface.

### **4.5.2 Overall Fuels Assessment**

Fuel is any material that can ignite and burn. Fuels describe any organic material, dead or alive, found in the fire environment. Grasses, brush, branches, logs, logging slash, forest floor litter, conifer needles, and home sites are all examples. The physical properties and characteristics of fuels govern how fires burn. Fuel loading, size and shape, moisture content and continuity and arrangement all have an affect on fire behavior. Generally speaking, the smaller and finer the fuels, the faster the potential rate of fire spread. Small fuels such as grass, needle litter and other fuels less than a quarter inch in diameter are most responsible for fire spread. In fact, “fine” fuels, with high surface to volume ratios, are considered the primary carriers of surface fire. This is apparent to anyone who has ever witnessed the speed at which grass fires burn. As fuel size increases, the rate of spread tends to decrease, as surface to volume ratio decreases.

Fires in large fuels generally burn at a slower rate, but release much more energy, burn with much greater intensity. This increased energy release, or intensity, makes these fires more difficult to control. Thus, it is much easier to control a fire burning in grass than to control a fire burning in timber.

When burning under a forest canopy, the increased intensities can lead to torching (single trees becoming completely involved) and potentially development of crown fire. That is, they release much more energy. Fuels are found in combinations of types, amounts, sizes, shapes, and arrangements. It is the unique combination of these factors, along with the topography and weather, which determine how fires will burn.

The study of fire behavior recognizes the dramatic and often-unexpected affect small changes in any single component has on how fires burn. It is impossible to speak in specific terms when predicting how a fire will burn under any given set of conditions. However, through countless observations and repeated research, the some of the principles that govern fire behavior have been identified and are recognized.

**Community Assessments:** The majority of homes and structures within and surrounding these communities are along a spectrum from low to moderate to high risk of loss to wildland fire. Individual characteristics of each community and structure dictate the risk factors. The prevalence of tree, shrub, and sage fuels pose a moderate to high threat to homes surrounded by these fuels, as fire typically spreads quickly through the grasses and sage but burns at relatively high intensities in the brush and forest tree fuels, especially where forest health is a factor. Many homes are at low risk because of the management of fuels in the area immediately surrounding the structures and their access routes. There are a number of individual homes that are at much higher risk to wildland fire loss in the area, largely due to use of highly ignitable materials in home construction, or by lack of defensible space surrounding the home. Home defensibility practices can dramatically increase the probability of home survivability. The amount of fuel modification necessary will depend on the specific attributes of the site. Considering the high spread rates possible in these fuel types, homes need to be protected prior to fire ignitions, as there is little time to defend a home in advance of fire.

### **4.5.3 Individual Community Assessments**

#### **4.5.3.1 Atlanta**

Atlanta is located in the far northeastern reaches of the county. Once a thriving mining and logging center, Atlanta now is home to a rural population base serving recreation interests, retirees, and seasonal visitors. The US Forest Service has a station here but no fire fighting equipment is maintained here. This beautiful community is nestled into vast forests along the Middle Fork of the Boise River. All of the homes in this community are concentrated on the small holdings of private lands, surrounded by US Forest Service managed forests. Forest tree species are thick around the community and within it, giving most of the risk factors to the defensibility of this Elmore County community.

##### **4.5.3.1.1 Fuels Assessment**

Fuel models 8, 9 and 10 are the most common in the forestlands surrounding the town site. Fires these fuel types tend to burn at a high intensity with variable spread rates. Forest health is variable with some pockets of diseased and insect infected trees scattered across the landscape. These pockets of dead and dying trees increase the risk but do not dominate the risk

assessment. The natural condition of these forests places them at an increased challenge to control after ignition has occurred.

During the assessment of this Wildland-Urban Interface Wildfire Mitigation Plan, the Hot Creek Fire was ignited along the Middle Fork of the Boise River and spread in all directions, threatening the community of Atlanta. Fortunately, none of the homes in this community were lost, but they were saved only because of the intensive efforts of local residents, the US Forest Service, and the Atlanta Rural Fire Department to implement fuels reduction projects, and reinforce the fire lines between the community and the fire (to the west). It is obvious to the authors of this plan that the homeowners and residents of Atlanta were fortunate that no homes or lives were lost during this fire event.

#### **4.5.3.1.2 Infrastructure**

Local power lines provide electricity to this community along the Middle Fork of the Boise River Road. There is only one supply of power into the community although many homeowners and business owners have portable and stationary generators used when the main power is out.

#### **4.5.3.1.3 Escape**

Access into and out of Atlanta is a challenge. The primary access is along the Middle Fork of the Boise River Road. This two-lane “forest highway” (gravel) leads from Atlanta to Boise and surrounding communities. Secondary access is provided along the James Creek Road. This secondary access is a primitive road, narrow, and intended to be a 4x4 path for forestry and recreational uses connecting Atlanta to Rocky Bar, Featherville, and Pine. However, when the Hot Creek Fire of 2003 closed the Middle Fork of the Boise River Road, the James Creek Road became the only terrestrial access.

The James Creek Road is narrow, steep in places, and poses problems for vehicles with a limited clearance. In addition, at least one bridge along this route is not rated for heavy vehicles such as water tenders and other large vehicles. The authors of this plan witnessed an Atlanta residents trying to use the James Creek Road driving an RV (Winnebago) to escape the threatened community. It not only scraped the oil pan, but it overheated on the first grade (climbing 2,000 feet), blocking all traffic until it was moved.

Because the James Creek Road is vitally important as a secondary access point in and out of Atlanta, it is recommended that it be treated as a significant infrastructure component of the county and treated to implement better fuels management along its path, and to create a wider travel path where possible. In addition, improvements to the travel surface that would allow a lower rated vehicle to pass is recommended.

#### **4.5.3.1.4 Community Assessment**

Prior to the Hot Creek Fire’s arrival in July 2003, assessments of the community were made. It was determined at the time that the vast majority of the homes in this community were in need of home defensible site treatments and that the community in general is in need of a larger, community defensible zone treatment. The forest fuels around and inside of the community are significant with surface fuels, ladder fuels, and crowns that could carry the fire during extreme fire weather conditions. Fuel Models 8, 9, and 10 can be found through and around the community.

During the Hot Creek Fire, the US Forest Service and local residents teamed up to implement fuels reduction activities around homes in this community and create fire breaks in strategic

locale. While these treatments were excellent and targeted at reducing the highest buildups of fuels, it remains to be seen if the treatments will be maintained after the ensuing spring growth replaces some of the fuels. A continuous, targeted fuels reduction program is needed for Atlanta homes and surrounding areas.

#### **4.5.3.1.5 Potential Mitigation Activities**

The fuel buildup around homes is the limiting factor for Atlanta. The reduction of fuels around homes would serve as a first step of defensibility against future wildland fires in this area. The Hot Creek Fire was not the only fire to threaten this community in recent history. Future fires are likely. Home site defensibility zones may not be enough to protect the people and structures in this area. A community defensible zone that uses natural terrain breaks, past fire boundaries, and other features to create a shield of treated fuels surrounding the community at an extended distance is strongly recommended. In order to carry this out, it is recommended that the edge of the area burned by the Trail Creek Fire (2000) be managed by keeping vegetation in a zone up to 200 feet wide treated of new fuels. This can be accomplished through prescribed burning or mechanical treatments, or both. The idea is to create an occluded island of treated fuels in and around the community so that future fires do not have the destructive potential past fire have. This is not to set the expectation that the community if treated will not burn, but to decrease the necessity for wildland fire fighters to abandon the fire line in favor of implementing fuels treatments in and around the community during a wildland fire.

The existence of a formal rural fire protection district is a great asset to the community. They have been and continue to be a great resource for the community of Atlanta. This district will be discussed in the Resources and Capabilities section (next) but it is recommended that augmentation to their resources be implemented to further provide protection for this community.

A homeowner education program should be implemented to advise homeowners about 'firesafe' landscaping and home construction materials. Given the rural nature of this community, and observations made while visiting with local residents, it is obvious that many living here are very aware of the need for fuels mitigation in and around the community.

#### **4.5.3.1.6 Coordination with the Comprehensive Plan**

The Elmore County Comprehensive Growth Plan (2004) details the following General Statements of Community goals for Atlanta. These goals are incorporated into this plan and are consistent with this intent of this planning effort.

8. **Natural Resources** - Protect the Middle Fork of the Boise River and all waterways and the Atlanta rural and community areas from incompatible land use encroachment and development. Support advanced wildfire-fighting capabilities to protect the area from wildfire damage. Re-vegetation to occur after all wildfires. Encourage and support mining and timber harvest to develop and continue in the Atlanta area.
9. **Hazardous Areas** - In any area deemed hazardous by County Officials, require a Conditional Use Permit procedure as a method of controlling or limiting development.
10. **Public Services, Facilities and Utilities** - Continue to expand the electrical systems to get power throughout the community and outlying areas at reasonable cost. Support the development of alternate energy systems in Atlanta to allow business growth. Encourage Elmore County Officials to help fund the Atlanta Community fire and public safety services with County funding. Upgrade to a modern, centralized community solid waste transfer facility. Seek to install a community sign/message board near the



entrance to the community to provide useful information. Support development of a community drinking water system.

#### **4.5.3.2 Dixie**

Dixie is a small community of homes populated by many structures built over the past 5 decades. Dixie is located approximately 2 miles north of Highway 20 and 12 miles northeast of Mountain Home. Most of the homes are scattered along the valley and meet the criteria of being a rural community. There is an agricultural nature to the area with undulating topography. A few homes exist in the outlying areas of Dixie, in areas where livestock grazing occurs. Dixie is located south of Anderson Ranch Reservoir, a destination for many recreational users during the wildfire season.

##### **4.5.3.2.1 Fuels Assessment**

Fuel models 1 and 2 are common across this area. Fires in these fuel types tend to burn at a low intensity but can spread rapidly. Mountain big sagebrush and cheat grass are the dominant vegetation. Widely scattered pockets of timber can be found here as they are usually associated with a home site. Fuels in forested areas tend to be FM8 and FM10. Grazing by cattle is common, which tends to control the abundance of fine fuels. The overall wildland fire risk to the community is limited due to the agricultural activity in the area.

Most visitors to this area are either on their way to Anderson Ranch Reservoir or Pine, Featherville, or Sun Valley. Few visitors are looking to come directly to Dixie as their destination. The primary access routes used are narrow roads (some gravel) with little room for vehicles to pull off the road. Because of this there is a potential for exhaust ignited fires to start.

##### **4.5.3.2.2 Infrastructure**

High-tension power lines run to the north from Anderson Ranch Reservoir in the direction of Boise. These lines could be compromised in the event of a rangeland fire. Mitigation activities consistent with the recommendation discussed above (infrastructure protection using intensive livestock grazing) should be considered. Local power supply lines run through this community and surrounding areas carrying power to the local homes.

##### **4.5.3.2.3 Escape**

Access to Dixie is good via Highway 20, a major access route in the area. Many escape routes are available to residents in the eventuality of a wildland fire. In the event that an evacuation would be called for, there would most likely be multiple avenues to utilize.

##### **4.5.3.2.4 Community Assessment**

Dixie residents have no structural fire protection for their homes. Wildland fire protection resources are available from the Forest Service Ranger station located to the north and from Mountain Home. Ample water sources for fire suppression are available at Little Camas Reservoir and Anderson Ranch Reservoir.

##### **4.5.3.2.5 Potential Mitigation Activities**

Grazing by cattle has significantly reduced the fine fuels that can quickly carry a fire to a home site. Any mitigation activities should emphasize establishing a defensible space around each

home. A lean, clean, and green area of 100 feet around each home should effectively reduce the risk of casualty loss. Trees within the 100-foot zone should be isolated and pruned to minimize the risk of a fire reaching the tree crown. A homeowner education program should be implemented to advise homeowners about 'firesafe' landscaping and home construction materials.

Home defensibility around the structures in and around Dixie is very important. Because there is no rural fire protection in this area, and wildland protection resources are not local, the responsibility of making a clean, green zone, devoid of wildland fuels around each home is very important. Posting signs along Highway 20 and the major access routes in this area that read "Approaching *Our* Community, Please be Fire Safe!" (or something like that) may help to reduce the human caused ignitions surrounding Dixie as it increases the awareness of motorists about rural communities in the Wildland-Urban Interface.

The abundance of sagebrush is very high in this area, and the sagebrush is competing aggressively against the beneficial grasses available for grazing. To increase the abundance of grasses for grazing purposes while reducing fire spread risk, a prescribed burn could be implemented. The burn could reduce the amount of sagebrush and thereby allow additional habitat for beneficial grasses. By increasing the amount of grass available and implementing a grazing management program, overall fire risk can be reduced while available AMU's could potentially be increased.

#### **4.5.3.3 Pine, Featherville, and Fall Creek**

Pine is located near the head of Anderson Ranch Reservoir. Featherville is located approximately 10 miles north of Pine. Both communities have homes dispersed into the cover of ponderosa pine and Douglas-fire trees with broader areas of sagebrush and grasses surrounding them. Dispersed, self-contained recreation can be found along the entire length of the reservoir. Boating, ATV use, and camping are common in the Pine and Featherville area. Many unsecured campfire rings can be found in areas frequented by recreation users. Ignition potential from human caused sources is very high and fire could spread rapidly up the steep slopes surrounding the reservoir once ignited.

##### **4.5.3.3.1 Fuels Assessment**

Fuel models 1, 2, 8, and 10 are the most common in this region and are very intermixed. Generally, low intensity fires burn in the grass and sage fuel types, while higher intensity fires are typical in the timber types. The fine, flashy type fuels that are found in fuel models 1 and 2 can quickly propagate a fire into the heavier fuels found in fuel type 10. Most of the timber is located in pockets on north aspects. Mountain big sagebrush and grasses dominate the vegetation on south slopes and between the pockets of timber. Ponderosa pine and Douglas-fir are the most common species in the timbered areas.

##### **4.5.3.3.2 Infrastructure**

Local supply power lines are located along local access routes.

##### **4.5.3.3.3 Escape**

Primary access to and from Pine is provided by a paved road from Mountain Home (via Dixie then Pine) which follows the eastern side of Anderson Ranch Reservoir. This road has twists

and turns, but is generally a very acceptable road for all ingress and egress. Secondary access is provided along the west side of Anderson Ranch Reservoir (via Dixie then crossing the Anderson Ranch Reservoir Dam then to Pine). However, this road is gravel, narrow in places, experiences heavy recreational access at times, and takes two to three times as long to traverse as does the paved road to the east of Anderson Ranch Reservoir. As an alternative route to Pine, it is acceptable. Access to Featherville is made through Pine along a paved road on the west side of the river. A gravel road is located on the east side of the river, but would provide little alternative access to the superior paved road paralleling it as they are within sight of each other.

The access between Pine and Featherville can be improved by controlling fuels along the travel corridors, especially where homes are also located. This may include removing brush, pruning trees, and “cleaning up” the areas where the highest concentrations of fuels are located.

Road signing is excellent in this area as nearly every road has a name and sign, along with the US Forest Service road number. This practice should be continued as new roads are constructed.

#### **4.5.3.3.4 Community Assessment**

Pine and Featherville have many homes in the ‘rural condition’ and several recreational homes exist in outlying areas. There is no provision of structural fire fighting equipment for either community. The only equipment available are from a private source, “Allen’s Water Tenders”, but this equipment may likely be contracted on a wildfire miles away from Pine or Featherville.

An excellent source of water is available for fire suppression from the Anderson Ranch Reservoir. Both communities also have 911 services available through the Mountain Home dispatch center and nearly every home has a phone. Intermittent cell phone service is also available throughout much of the area.

Located between Pine and Featherville is a small cluster of houses situated along Grouse Creek road. This area meets the classical definition of the wildland-urban interface condition and has been identified by the local sheriff’s deputy as a local high priority. Several of the homes in this area directly abut the wildland and there are several ‘non-firesafe’ construction issues with these homes. Within this area are several patches of dead and dying ponderosa pine and Douglas-fir. Although the access to this area is good, the topography of the area could create conditions leading to a fast spreading wildfire. This small community would be a prime area for a more intensive fuels treatment project.

While the focus of many fuels reduction projects are targeted at reducing the threat that a wildland fire will threaten homes, the situation may be slightly reversed in this community. In addition to a threat from wildfires, local homes are at risk from a structure in the community catching fire, spreading to surrounding fuels, then spreading to another structure and so on. This has happened in other communities and is a real possibility in all of the Pine – Featherville corridor. Controlling fuels in a home defensibility zone around each structure is critically important.

#### **4.5.3.3.5 Potential Mitigation Activities**

Creating a home defensible space around each home in the wildland-urban interface should be the primary objective in the Pine-Featherville area. Considering the relatively flat topography the communities are located in, a lean, clean, and green zone of 150 feet should be sufficient to reduce the risk of casualty loss. Within this zone, trees should be pruned, ladder fuels should be reduced, and trees should be thinned. Brush species and sagebrush species should be thinned

in this defensible zone to insure that fire is not carried to the homes. A wind-driven fire is the greatest risk to these communities.

These communities have a population base scattered over a fairly finite area extending north and south in the valley bottom. The creation of a rural fire protection district is strongly recommended. This issue was discussed during the public meetings held in the autumn of 2003. The need is recognized by the local residents, however, as some pointed out, fire fighting is a young person's task and most of the residents are retired. Many questions were asked about the newly formed Oasis Rural Fire Department and how they created that fire district. A fire station located roughly between the two communities with a structural engine, wildland engine, and water tender would be a great start for these communities. Recruiting volunteers who are available to receive training will be a significant step in this process. One final note on this topic, the other rural fire district personnel in attendance at the public meeting made a commitment to assist these communities in their efforts if that assistance is desired.

#### **4.5.3.3.5.1 Grouse Creek Treatment Area**

**Project Area Description:** The Grouse Creek Treatment Area project includes all the structures located along Grouse Creek Road, east to Grouse Creek.

This area is characterized by a very xeric environment dominated by scattered ponderosa pine, Douglas-fir, heavy brush and grasses. The draw in which most of the houses are located could function as a "chimney" in the event of a wildfire which could cause the fire to spread rapidly up the canyon.

**Concerns:** The primary concern with this area is the xeric timber type in conjunction with a moderate gradient and upslope prevailing winds. This combination can lead to rapid fire spread and a high probability of a crown fire, which could result in the loss of homes. This area has been identified by the local sheriff's deputy as having a high risk to casualty loss due to a wildland fire.

There are many issues with home construction and landscaping in the project area. Most notably, cedar shake roofs and cedar siding are frequently used as construction materials. Several of the properties have been built in the timbered draw, which may funnel fire directly towards the structures. Trees commonly abut or overtop the homes. The use of 'non-firesafe' landscaping vegetation immediately adjacent to the homes is common. The defensible space around many of the properties is little to none. Several pockets of dead and dying timber were observed in this area which could facilitate a fire moving from the surface into the tree crowns.

Sources of ignition are widespread and common on the Grouse Creek project. Recreational use near the river is frequent. Lightning storms traveling up the canyon are also common.

**Prescription:** Considering the close proximity of homes to one another, the Grouse Creek project area could be treated as a single entity. An assessment of the entire community should be accomplished first. This assessment would include meeting with the homeowners to develop a plan that effectively reduces their risk to wildland fire. The evaluation will also be used to prioritize higher risk areas in the community. To increase the likelihood of structure preservation, a lean, clean, and green zone needs to be established around the entire community. A defensible space of 250 feet surrounding the border of the community is recommended for this xeric environment. Diseased, dead and dying trees should be removed regardless of spacing. Trees selected for removal should be dragged with limbs, to an on-site chipping location. Additionally, pruning on each tree within the defensible zone would maximize the probability that the fire would remain on the ground. Removal of additional ladder fuels such as brush, regeneration, and slash within the defensible space and maintaining a green lawn around each

home is recommended to prevent a wildland fire from reaching homes. Trees within the border of the community should be isolated from one another to prevent a crown fire and reduce spotting potential.

A comprehensive landowner educational program should be developed to address issues that the landowners can mitigate on their own. This program should concentrate on items such as proper 'firesafe' landscaping techniques, appropriate home construction materials, and easily identifiable addressing of homes. Individual home assessments can be used as an effective educational tool to further promote awareness. Additional emphasis should be made to ensure landowner maintenance of defensible space around homes. An evacuation plan specific for each residence should be developed in collaboration with the local law enforcement (County Sheriff). Ideally, a rural fire department will be created to serve this area and take on the responsibility of working with the local residents.

#### **4.5.3.3.5.2 West Side Anderson Ranch Reservoir Treatment Area**

**Project Area Description:** The West Side Anderson Ranch Reservoir Treatment Area project stretches from the south end of Anderson Ranch Reservoir along the west side of the reservoir where structures are located, all the way to Pine. A very large area, this zone is home to many permanent homes and recreational sites.

The majority of this area is characterized by a steep, predominantly east facing slope (very irregular). This zone is the intermix of rangeland and forestland vegetation communities dominated by scattered ponderosa pine, Douglas-fir, sagebrush and grasses.

**Concerns:** There are many structures scattered throughout the project area. The primary concern with this area is the xeric vegetation type in conjunction with a severe gradient and upslope prevailing winds. This combination can lead to rapid fire spread and a high probability of a crown fire, which could result in the loss of homes. This is coupled with high risk structure factors of limited access and wildland fuels overtopping both access routes and the homes.

There are many issues with home construction and landscaping in the project area. Most notably, cedar shake roofs and cedar siding are frequently used as construction materials. Several of the properties have been built in timbered draws, which may funnel fire directly towards the structures. Trees commonly abut or overtop the homes. The use of 'non-firesafe' landscaping vegetation immediately adjacent to the homes is common. The defensible space around many of the properties is little to none.

The main access route into the project area is the Pine-Featherville Road, which has a good gradient, and has several turnouts. Access to individual homes is commonly by private, narrow, overgrown driveways with no turnouts and only one direction for ingress and egress. Fire fighting equipment would have no method to turn vehicles around or even reach many of the structures.

Sources of ignition are widespread and common on the Pine-Featherville project. Recreational use near the reservoir by boaters, fishermen, campers, and all terrain vehicles is frequent. Evidence of campfires outside of established campfire rings is widespread.

**Prescription:** Individual home and business assessments for those structures that are in the wildland-urban interface should be administered first. These assessments would document individualized treatments and include a meeting with the homeowner to develop a plan that effectively reduces their risk to wildland fire. The evaluations will also be used to prioritize higher risk homes. To increase the likelihood of structure preservation, a lean, clean, and green zone

needs to be established around every home. Once home site defensible plans are completed, a comprehensive cost estimation can be determined and then implemented.

A comprehensive landowner educational program should be developed simultaneously to address issues that the landowners can mitigate on their own. This program should concentrate on items such as proper 'firesafe' landscaping techniques, appropriate home construction materials, and easily identifiable addressing of homes. Individual home assessments can be used as an effective educational tool to further promote awareness. Additional emphasis should be made to ensure landowner maintenance of defensible space around homes.

The access and escape routes within the West Side Anderson Ranch Reservoir Treatment Area are generally adequate and most of these roads have good signage. However, some roads need concentrated mitigation activities. Many of the recreational homes are constructed on steep, winding, and overgrown roads that would not serve as adequate escape routes or access roads for emergency personnel.

#### **4.5.3.3.6 Coordination with the Comprehensive Plan**

The Elmore County Comprehensive Growth Plan (2004) details the following General Statements of Community goals for Pine, Featherville, and Fall Creek. These goals are incorporated into this plan and are consistent with this intent of this planning effort.

9. **Natural Resources** - Protect the Anderson Ranch Reservoir, the South Fork of the Boise River and all waterways in the Pine / Featherville / Fall Creek community areas from incompatible land use encroachment and development. Support advanced wildfire-fighting capability to protect the area from wildfire damage. Re-vegetation to occur after all wildfires. Encourage and support mining and timber harvest to develop and continue in the Pine / Featherville / Fall Creek areas.
10. **Hazardous Areas** - In any area deemed hazardous by County Officials, require a Conditional Use Permit procedure as a method of controlling or limiting development.
11. **Public Services, Facilities and Utilities** - Establish a new zip code for the three communities. Develop a new US Post Office to serve the Communities. Continue to expand the electrical systems to get reliable three-phase power throughout the community and outlying areas at reasonable cost. Support creation of a community fire district including a heated building for fire equipment and an ambulance. Upgrade to a modern, centralized community solid waste transfer facility. Create a system of recreational trails for year-round use. Support expansion of services to accommodate summer/winter residents and visitors. Support upgrading telephone service. Seek to install a community sign/message board near the entrance to each community to provide useful information.

#### **4.5.3.4 Prairie**

Prairie is located 26 miles west of Pine, and 45 miles east of Boise. A rural community with ample scenic beauty, Prairie is situated on the plateau above Long Gulch at an elevation of nearly 5,000 feet. Homes in this community are situated between the thick and abundant sage brush and bunch grasses and clumps of ponderosa pine that give way to thicker and expansive forest tree species. Many of the homes of this community are scattered into the landscape, giving nearly every home a full interface WUI situation to deal with.

#### **4.5.3.4.1 Fuels Assessment**

Fuel models 1 and 2 are the most common in the rangelands while fuel models 8 and 10 are more common where forest tree species are to be found. Fires in FM 1 and FM2 fuel types tend to burn at a low intensity but spread rapidly. This community is surrounded by agricultural fields and rangelands and scattered pockets of timber. Adhering to its namesake, this community is located on a relatively flat prairie adjacent to the Boise National Forest. There are discontinuous clusters of Douglas-fir and ponderosa pine throughout the community.

Past and on-going management of the forestlands in this area demonstrates that the local land managers are implement forest management activities in such a way to make areas surrounding the community defensible against wildfires encroaching on the community. Thinning operations, road building, and other forest management activities reduced the fuels buildup while making the area more defensible.

Similarly, livestock ranching in the area was observed as being managed well; livestock were well distributed, herds were manageable in size, and fencing was in good shape. These livestock animals serve to keep many of the fine fuels grazed, while ranchers in the field keep an eye out for wildfire ignitions.

#### **4.5.3.4.2 Infrastructure**

Local supply power lines are located along local access routes.

Prairie is located near the geographical middle of Elmore County and has few resources available for structure protection. The community of Prairie has one fire engine capable of fighting a wildland fire. However, there is no rural fire district serving this community.

#### **4.5.3.4.3 Escape**

Multiple access points are available for the residents and visitors of Prairie to use in the case of an emergency, leading in all cardinal directions.

#### **4.5.3.4.4 Community Assessment**

Some of the structures that are situated in “Prairie Proper” already have an established defensible space that includes a lean, clean, and green zone around the home. However, several structures are located outside of the concentration of homes in the wildland-urban interface. These homes could benefit from a fire mitigation project to increase the defensible zone around them. Trees should be thinned, pruned, and isolated so the probability that a crown fire becomes established is minimal.

#### **4.5.3.4.5 Potential Mitigation Activities**

The fuel buildup around homes is the limiting factor for Prairie. The reduction of fuels around homes would serve to link the land management activities around Prairie, with defensible sites around the homes and their infrastructure.

The creation of a formal rural fire protection district is strongly recommended. This issue was discussed during the public meetings held in the autumn of 2003. The need is recognized by the local residents as evidenced by the acquisition of fire fighting equipment by local residents. A fire station located in the center of the community with a structural engine, wildland engine, and water tender would be a great start for this community. Recruiting volunteers who are available

to receive training will be a significant step in this process. Future development of this fire district would be enhanced by water storage capabilities in and around this community.

A homeowner education program should be implemented to advise homeowners about 'firesafe' landscaping and home construction materials. Given the rural nature of this community, and observations made while visiting with local residents, it is obvious that many living here are very aware of the need for fuels mitigation around the community. No doubt the proximity of the Foot Hills Fire has contributed to this awareness and need.

#### **4.5.3.4.6 Coordination with the Comprehensive Plan**

The Elmore County Comprehensive Growth Plan (2004) details the following General Statements of Community goals for Prairie. These goals are incorporated into this plan and are consistent with this intent of this planning effort.

12. **Natural Resources** - Protect Smith Creek and all waterways and the Prairie rural and community areas from incompatible land use encroachment and development. Support advanced wildfire-fighting capability to protect the area from wildfire damage. Encourage re-vegetation to occur after all wildfires. Encourage and support mining and timber harvest to develop and continue in the Prairie area.
13. **Hazardous Areas** - In any area deemed hazardous by County Officials, require a Conditional Use Permit procedure as a method of controlling or limiting development.

## **4.6 Fire Fighting Resources and Capabilities**

The Fire Fighting Resources and Capabilities information provided in this section (3.4) is a summary of information provided by the Rural Fire Chiefs or Representatives of the Wildland Fire Fighting Agencies listed. Each organization completed a survey with written responses. Their answers to a variety of questions are summarized here. ***In an effort to correctly portray their observations, little editing to their responses has occurred.*** These summaries indicate their perceptions and information summaries.

### **4.6.1 Wildland Fire Districts**

#### **4.6.1.1 Bureau of Land Management, Lower Snake River District**

- Boise BLM Fire Office, 3948 Development Ave., Boise, 83705; 208-394-3400
- Hammett Guard Station, north of Exit 112 on Interstate 84, 208-366-7722
- Bruneau Guard Station, Hot Creek Road, Bruneau, 208-845-2011
- Wild West Guard Station, Exit 13 off I-84, 208-454-0613

The Lower Snake River District BLM encompasses approximately 5.5 million acres of BLM-managed land in southwest Idaho. Through agreements with the Idaho Department of Land and the National Forest Service, the BLM also provides initial suppression on IDL and FS lands in some areas within the district boundary. The border of the district extends from the Nevada border near Jackpot and runs north along Salmon Falls Creek; just west of Hagerman and follows the Snake River from just south of Bliss to King Hill; then runs north to a point approximately 7 miles west of Hill City; then follows the foothills west and north across the Boise Front; up Highway 55 and includes some scattered areas into the Crouch area; then jogs in a northwesterly direction to the Oregon border near Cambridge.

Special features within the district include the 485,000-acre Snake River Birds of Prey National Conservation Area; the Owyhee Canyonlands; portions of the north and south fork Payette River



corridors;the Owyhee Mountains, including the historic Silver City area; the Jarbidge and Bruneau river canyons; and several popular recreation areas and wildland-urban interface areas.

The district's primary station is located in Boise, where 3 crews are based, along with both helicopter and fixed-wing aircraft resources. One of the three Boise crews is stationed during the day at Boise Fire Station #2 at the base of the foothills. Additional day-use stations are available in Kuna, Hidden Springs, Eagle, and at Juniper Butte.

Additionally, the district has out stations at Bruneau, Hammett, and Wild West (at Exit 13 on Interstate 84). Each facility is staffed by one crew, with three engines, on a 24-hour, 7-day per week basis from mid June to mid September. A dozer also is typically based at Hammett.

BLM crews are neither trained nor equipped for structure suppression. Primary protection responsibilities are on public land throughout southwest Idaho and we respond to fires originating on public lands and those on private land that threaten public land. Additionally, through mutual aid agreements with local fire departments, we will provide assistance when requested on wildland fires.

The BLM does not provide formal EMT services. Our crews are trained in first-aid, and some staff members have EMT and first-responder trainee, but this is not a service we provide as part of our organization.

**Personnel:** The fire program staff totals 135 individuals, including 20 permanent employees, 40 career-seasonal employees who work up to nine months each year, and 75 seasonal employees on staff from roughly June to September. These are all paid staff members trained in wildland fire, but not in structure protection.

**Mutual Aid Agreements:** We have an interagency working relationship with the US Forest Service (Boise National Forest) and the Idaho Department of Lands and our crews are dispatched on a closest-forces concept to public lands. Additionally, we have mutual aid agreements with approximately 42 community fire departments.

#### **Top Resource Priorities:**

- **Training:** Increasing the amount and level of training for and with partner community fire departments .
- **Communications:** Being able to purchase radios for partner community departments to facilitate communication, coordination, and safety at the fire scene.

The district encompasses a broad spectrum of resources at risk, including recreation sites, power lines, wildlife habitat, wilderness study areas, wild horse management areas, historic districts, cultural and archaeological sites, and a range of vegetation types, from rare plant species to sagebrush and timber resources.

Wildland-urban interface areas are found throughout the district. There are two top priority areas within the district: 1) the wildland-urban interface area across the Boise Front, from Highway 21 near Lucky Peak Reservoir; and 2) the Snake River Birds of Prey National Conservation Area along the Snake River. Bordering the SNRBOPNCA on the north is wildland-urban interface areas of concern near the community of Kuna.

Beyond these two top priority areas are wildland-urban interface areas across the district, from Jackpot, Nevada to Cambridge and Council. Table 3.1 summarizes available equipment.

**Table 4.2. BLM Equipment List for Wildland Fire Protection**

Truck #	Assigned Station	Make/ Model	Capacity (gallons)	Pump capacity (GPM)	Type
7158	Duck Valley	Internat'l	Heavy 800 – 1000	120 GPM	Wildland
7130	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7131	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7132	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7133	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7134	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7135	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7136	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7137	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7138	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7154	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7155	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7143	Hammett	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7144	Hammett	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7145	Hammett	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7146	Bruneau	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7147	Bruneau	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7148	Bruneau	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7140	Wild West (exit 13, I-84)	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7141	Wild West (exit 13, I-84)	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7142	Wild West (exit 13, I-84)	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7150	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7151	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7156	Boise	Internat'l	Heavy 800 – 1,000	120 GPM	Wildland
7161	Boise	Ford	Light 300	120 GPM	Wildland

- The LSRD has 3 dozers, one of which is stationed in Hammett; and two in Boise
- The LSRD also has 3, 3500 gallon water tenders.
- There are 4 Fire Lookouts, one on Squaw Butte, north of Emmett; one on South Mountain, southeast of Jordan Valley; one on Danskin Peak, north of Mountain Home; and one on Bennett Mountain, northeast of Mountain Home.

**Additionally, suppression resources include:**

- **Helicopter:** The district has an Aerospatiale helicopter on contract from June to October and an 11 member helitack crew. U.S. Forest Service helitack crews stationed at Lucky Peak and Garden Valley are available for assistance if needed and if they are not assigned elsewhere. Additionally, there are other helicopter resources equipped for fire missions that are available on a call-when-needed (CWN) basis.
- **Fixed-Wing:** The district has an AeroCommander 500S fixed-wing aircraft, staffed by a pilot and the air attack supervisor. The air attack supervisor coordinates aerial firefighting resources and serves as an observation and communications platform for firefighters on the ground.
- **Air Tankers:** There are typically two air tankers (fire retardant planes) on contract in Boise during the fire season. However, these aircraft are considered national resources and are assigned where they're needed at any particular time. Other, nearby, air tankers are located in McCall and various locations in Nevada and Oregon.

**The primary operational challenges facing the district include:**

- Continued development of wildland-urban interface areas across the district.

- Communications and coordination with current, new, and developing community fire departments and working with them to stay abreast of communication and technological developments so that we can continue and improve working together effectively at the fire scene.
- Internally, an operational challenge is to have sufficient and appropriate staff available throughout the year to foster partnerships with local departments and facilitate continued and improved coordination, training, communications, and other joint efforts with our partners across the district.
- Our effectiveness in addressing these challenges will largely hinge on funding available for the fire program and its various elements.

**Resource Needs:**

- Training: Increasing the amount and level of training for and with partner community fire departments.
- Communications: Being able to purchase radios for partner community departments to facilitate communication, coordination, and safety at the fire scene.

Our effectiveness in addressing these challenges will largely hinge on funding available for the fire program and its various elements.

**4.6.1.2 Boise National Forest, South Zone FIRE Organization**

- Boise Front Office, 3948 Development Ave, Boise, 83705; (208) 384-3215
- Mountain Home Ranger District, 2180 American Legion Blvd, Mountain Home, 83647; 208-587-7961
- Lester Creek Guard Station, 2221 Lester Creek Rd, Pine, 83647; (208) 653-2358
- Lucky Peak Fire Station, 15169 E. Hwy 21, Boise, 83716; (208) 373-4410
- Idaho City Ranger District, 3833 Hwy 21, Idaho City, 83631; (208) 392-6681

The Boise National Forest encompasses approximately 2.27 million acres of National Forest System land in Southwest Idaho. Through agreements with the Bureau of Land Management and Idaho Department of Lands, the Boise NF provides initial suppression on Lower Snake River District BLM and Southwest IDL lands in some areas within and adjacent to the Forest boundary.

Fire suppression resources on the Boise National Forest are organized into a North Zone, South Zone, and Supervisor’s Office. In addition, the Boise NF is a partner in the Boise Interagency Logistics Center, the interagency dispatch office shared between BLM, IDL, and USFS.

Fire protection for Boise National Forest jurisdiction lands and Boise NF protection lands within Elmore County are under the primary responsibility of the South Zone FIRE organization. The South Zone FIRE organization consists of 95 permanent and seasonal fire fighters located at fire stations on the Mountain Home and Idaho City Ranger Districts. Supervision of the South Zone’s fire suppression resources are the responsibility of a Zone Fire Management Officer, a Zone Fuels Officer, two Suppression Assistant Fire Management Officers, two Fuels Assistant Fire Management Officers, a Helitack Foreman, and an Interagency Hotshot Crew Superintendent.

**Table 4.3. USFS South Zone Resources for Wildland Fire Protection**

Assigned Station	Resource	Type	# Fire Fighters
Boise Front Office	Zone FMO	Division Chief	1
	District Fuels AFMO	Fuels Specialist	1
Mountain Home RD	District AFMO	Battalion Chief	1
Lester Creek Guard Station	Engine-11	Type 4 Wildland Engine	7
	Crew-11	Type 2	6
	Prevention-11	Prevention Officer	1
	Patrol-12	Type 7 Patrol Engine	1
	Trinity Lookout	Staffed lookout tower	1
Lucky Peak Fire Station	Boise Helitack	Type 2 Exclusive Use Helo w/ 12 person I.A. module (rappel capable)	12
	Engine-21	Type 4 Wildland Engine	7
	Prevention-21	Prevention Officer	1
	Patrol-22	Type 7 Patrol Engine	1
Idaho City RD	Zone Fuels Officer	Division Chief	1
	District AFMO	Battalion Chief	1
	District Fuels AFMO	Fuels Specialist	1
	District Fuels Technician	Fuels Technician	1
	Engine-31	Type 4 Wildland Engine	7
	Crew-3	Type 2 I.A. Crew	20
	Prevention-31	Prevention Officer	1
	Patrol-32	Type 6 Patrol Engine	1
	Sunset Lookout	Staffed lookout tower	1
Idaho City IHC	Type 1 Interagency Hotshot Crew -National Shared Resource	20	

### Season of Availability

Permanent and permanent-seasonal fire managers and supervisors are on duty throughout most of the calendar year, depending on their length of tour. Fire Managers maintain a year-round staffing at the Boise Front Office, Mountain Home RD, and Idaho City RD. Lester Creek Guard Station and the Lucky Peak Fire Station are staffed during the period from mid-April until late November. The Boise National Forest's established fire season is from June 1 through end of October.

Seasonal fire fighters (engine, handcrew, helitack, hotshot, prevention, lookouts) are brought on duty and staff their fire stations from mid-May to late October. Depending on seasonal variability, those resources may become available for fire suppression earlier in the spring and remain on duty longer into the fall.

### Aviation

The Boise Helitack Module at Lucky Peak Fire Station staffs a Bell 212 Type 2 helicopter based a 100-day availability exclusive-use contract. The twelve-person helitack module is rappel certified, and are available for local initial attack and wildland fire assignments off-forest.

In addition to the South Zone's helitack crew, the North Zone FIRE Organization of the Boise NF maintains a Bell 407 Type 3 helicopter based on a 110-day availability exclusive-use contract at

the Garden Valley Fire Station. The Garden Valley Helitack Module is also rappel certified, and are available for local initial attack and wildland fire assignments off-forest.

The Boise NF maintains a National Shared Resource (NSR) Retardant Base, located in Boise. The Forest also 'hosts' two air tankers on national contract during the fire season, although the air tankers may be assigned elsewhere during the season as needed.

### **Mutual Aid Agreements**

There are Cooperative Fire Protection Agreements and strong interagency working relationships with the Bureau of Land Management (Lower Snake River District) and the Idaho Department of Lands (Southwest), as well as the State-wide Annual Operating Plan for BLM, USFS, and IDL within the state of Idaho. In addition to these agreements, all three agencies are partners in the centralized Boise Interagency Logistics Center (BILC) for dispatching and coordination during the fire season.

Fire suppression resources are typically dispatched by BILC on a closest-resource concept, regardless of land jurisdiction. Dispatching of resources follows interagency Wildland Fire Computer Aided Dispatch (WILDCAD) protocols, and are mutually supported by the three land management agencies. All Southwest IDL lands within Elmore County fall under either USFS or BLM protection.

In addition to mutual aid agreements with BLM and IDL, the Boise NF also provides fire protection for land administered by the Sawtooth National Forest within Elmore County, and similarly, the Sawtooth provides fire protection for portions of the Boise NF.

### **Operational Challenges**

Continued development of wildland-urban interface and intermix areas within Elmore County, especially in the Pine-Featherville area, and townsite of Atlanta.

Lack of a rural or volunteer fire district in the Pine-Featherville area. USFS initial attack resources stationed at Lester Creek are heavily relied upon by the Elmore County Sheriff to respond to an increasing number of incidents, ranging from wildland fires to traffic or medical incidents.

Long response time to Atlanta. The response time from any of the four fire stations on the South Zone to Atlanta is 1.5 to 2.5 hours by vehicle, and 25 minutes by helicopter. There is a heavy reliance of early detection by lookout towers, aerial detection platforms, or the Atlanta VFD.

The increasing number of recreational visitors to the National Forest in key areas such as Anderson Ranch Reservoir, the South Fork Boise River, Middle Fork Boise River, Fall Creek, Trinity Lakes. Hunting seasons in the late summer and throughout the fall bring an additional high number of visitors to the Forest. Prevention and patrol efforts can help mitigate the risk of human-caused fires, but additional outreach and educational programs need to be developed and implemented.

Internally, operational challenges are to have sufficient and appropriate staff available throughout the year to provide fire protection staffing, depth of organization, fuels management planning and implementation, and fostering partnerships to improve coordination and joint fire suppression operations. Our effectiveness is largely dependent on funding for the fire program.

## 4.6.2 Rural Fire Districts

### 4.6.2.1 Atlanta Rural Fire Protection District

P.O. Box 63  
Atlanta, Idaho 83601  
(208) 864-2125

**Personnel:** The fire protection district is staffed by an all-volunteer staff of 10 people, including the Fire Chief.

**Fire Station:** 40'x24', two bay, unfinished station. Unfinished office space available upstairs.

#### Equipment

- 1978 Ford 350 Wildland Engine- 250 gal capacity.

The fire protection district works closely with the Atlanta Highway District. Equipment available on loan includes:

- 1965 Cat D6B
- 1979 John Deere 310A Backhoe
- 2003 John Deere 544H Loader
- 2001 Cat Grader

**Misc. Equipment:** 5 hp Honda pump

**First Aid:** Atlanta fire protection provides basic life support. Two ambulances are available and staffed as needed.

**Resource Needs:** Atlanta has quite a list of resource needs, for both structural and wildland fire fighting. Need to confer in order to determine what the greatest resource needs actually are.

### 4.6.2.2 Glens Ferry City/ King Hill Rural Fire Department

Physical address: 136 East 2nd  
Mailing address: Glens Ferry City: P.O. Box 910  
King Hill Rural: P.O. Box 472  
Glens Ferry, Idaho 83623  
Tel: 208-366-2689

Both the city and rural departments are dispatched from the fire department, located in the town of Glens Ferry. King Hill Rural is a large district with a number of cooperative agreements.

**Personnel:** Both the City and Rural departments are staffed on a volunteer basis. The Fire Chief and Assistant Fire Chief are paid part-time. The organization has a total of 20 firefighters.

**Fire Station:** The current Fire Department houses all equipment. Station capacity is nine trucks. The station is complete with a small office.

#### Equipment:

##### Structural Equipment

- 1977 Ford LaFrance 1000 gal. Pumper, 1500 gpm.
- 1987 GMC FMC 1000 gal. Pumper, 1500 gpm.
- 2000 Freightliner 1000 gal. Pumper, 1500 gpm.

### **Wildland Equipment**

- 1982 Chevrolet 1 ton 4x4 Light brush truck. 350 gal.
- 1994 Chevrolet 1 ton 4x4 Light brush truck. 250 gal., 1200 gpm.
- 1991 Chevrolet 1 ton 4x4 Light brush truck. 200 gal.
- 1974 White 3,500 gal water tender w/ PTO.
- 1992 4x4 International, Heavy brush engine. 1,000 gal. 1200 gpm.

### **Ambulance/Extraction**

- 1982 Ford Extraction
- 1989 International 2-ton

*Cooperative Agreements:* King Hill Rural has cooperative agreements with both The Upper and Lower Snake River Districts of the BLM. The Lower Snake River District stations one three-person crew with engine at Hammett. The BLM has provided assistance with training and equipment as well. King Hill also has cooperative agreements with the Bliss Rural Fire Department in Gooding County to the east, as well as with both the Mountain Home Rural and Mountain Home Air Force Base Fire Departments.

*Potential Resource Needs:* The district would benefit from an addition to the current Fire Department facility. At present the station cannot garage all of the vehicles. This would be desirable in order to avoid pre-mature aging from expose to the weather.

#### **4.6.2.3 Mountain Home City/Rural Fire**

590 South Main  
Mountain Home, ID 83647  
208-587-2117

Mountain Home fire departments have both structural, wildland fire protection duties throughout the district, as well as a Hazardous Materials unit.

Personnel: One full-time fire chief and a staff of 30 volunteers staff the fire protection district. The fire department is dispatched through Elmore County Sheriff 24 hours a day

#### **Fire Stations/Equipment:**

##### **Rural Station 1 590 South Main**

- 2002 Ford F-550 400-gal. Light Brush Unit. 120 gpm. Foam capabilities.
- 1975 Kaiser 1500-gal. Heavy Brush Unit. 120 gpm. Foam capabilities.
- 2000 General 2300-gal. Pumper/Tender. 1500 gpm.
- 1981 FMC 500 500 gal. Pumper. 1000 gmp.
- 1971 Inernational 1500 gal. Tender. 500gpm.
- 1992 GMC 3000 gal. Tender. 500 gpm.
- 1997 International 800 gal. Brush Unit.

##### **City Station 1 220 South 2<sup>nd</sup> East**

- 1989 Pierce Quint pumper/ ladder truck 75 ft. 300 gal, 1500 gpm.
- 1993 Pierce 500 gal. Pumper, 1500 gpm.
- 1982 Ford 500 gal. 1000 gpm.

**City Station 2**  
**1410 North 6<sup>th</sup> East**

- 1978 American LaFrance 500 gal. Pumper, 1250 gpm.
- 2 heavy rescue extraction units

**City Station 3**  
**595 West 8<sup>th</sup> South**

- 1974 American LaFrance 500 gal. Pumper, 1000 gpm.

**Mutual Aid agreements:** Mountain Home FD has cooperative agreements with the BLM, Forest Service and the Mountain Home AFB. Mountain Home responds to all wildland fire incidents within their protection district. Typically, the BLM and Forest Service respond as well. Mountain Home AFB will respond on a call when needed basis. Informal mutual aid agreements are also in place for assisting the Glenns Ferry/ King Hill departments.

**4.6.2.4 Oasis Volunteer Fire Department**

2792 Desert Wind Rd.  
Oasis ID 83647-5020  
Daniel M. Hennis, Chief  
d.m.hennis@att.net  
208-796-2747

Oasis is a new fire protection district established by a group of concerned residents. There has been considerable interest within the community in contributing and advancing the department. Capabilities will increase as training and other resources become available.

**Personnel:** The fire protection district is staffed by an all-volunteer staff of 12 people, including the Fire Chief.

**Fire Station:** No station exists at this time; station scheduled for completion toward the end of 2004.

**Equipment:**

- 1958 Ford F-600. 1,000 gallon wildland engine
- 1968 Kaiser 6x6 M-35 1,200 gallon wildland engine
- Three ¾ ton trucks with 150 gallon tanks and small pumps.
- Out of Service: 1955 Ford –LaFrance Pumper 750 gpm's at 300 psi.
- Converting 1954 Ward LaFrance 750 to Range Sweeper (1,000 gallons @ 50 gpm at 350 psi)
- 5,500 gallon water storage tank at Soles Rest Substation

**First Aid:** Oasis does not provide formal first aid at this time. However, multiple department members are trained in first aid, including one EMT, and would respond when needed.

**Cooperative Agreements:** Oasis has cooperative agreements with both the BLM and the IDL. BLM resources typically respond from Hammett, while IDL resources respond from Boise. The BLM also supports helitack and bomber resources from Boise.



**Future development:** Oasis VFD has encouraged the construction of a permanent fire station for department needs as well as to serve as a staging platform for BLM and/or IDL resources. There is a considerable gap between resources stationed at Boise and Hammett. Oasis would provide a reasonable midpoint to reduce the gap. The district would also like to see the creation of access roads through BLM ground in order to provide access for suppression activities and pre-existing fuel breaks, as well as to serve as alternate escape routes in the event the primary escape routes are compromised. Priorities for this road construction project would be: further construction and widening of the access road along the northern border of the district from Merv Landing Road through to Ditto Creek Road and construction of a new road extending east from Simco Junction to Ditto Creek Road. This route will not only enhance access, but it will also create a natural boundary and fuel break between Mayfield and Oasis; therefore, protecting both communities.

**Greatest Resource Needs:** In addition to a station, Oasis is in need of multi-band radios (6 more), and 2 base stations, for suppression activities. Currently, there is an inadequate number of radios available for the department. A multi-purpose roadable dozer such as an A/T forklift with blade is also needed.

Because the Oasis VFD is relatively new, it is in need of a station, and basic supplies needed to begin operations as a fire district. This includes a business plan for the operations of the district, land, a station house with office space, utilities, and associated materials. There is a piece of ground within the district (Desert Wind Road) suitable for the station which also has two tanks holding a combined total 230,000 gallons, which could be converted into water storage for the VFD. The estimated cost of a business plan, the land, and a station as described above is approximately \$125,000. As a resource need in Elmore County, this would certainly be funds well allocated.

#### **4.6.2.5 Mountain Home AFB**

351 Alpine St. Bldg 206  
Mountain Home AFB  
208-828-6235

Mountain Home AFB fire department is a federal service that has structural, wildland and aircraft crash rescue protection on 2,556 acres of the base.

*Personnel:* The air base fire department is manned 24 tours a day. There are 55 members of the AFB fire department, including chief and deputy chief.

*Fire Station:* Station 1- Built in 1998, nine drive-thru stalls, sleeps 23. Station 2- Built in 1995, two stalls, sleeps six.

*Equipment:*

The majority of the fire response equipment at the base are designed specifically for crash-rescue and structural needs. Only select equipment is capable of off-road use.

#### **Structural Engines**

- 1994 KME 1 4WD 1250 gpm pumper.
- 1994 KME 1 4WD1250 gpm pumper.
- 1994 KME 1 2WD1250 gpm pumper.

#### **Haz-Mat**

- 2002 Haz Mat Trailer

## **Crash Trucks**

- 1995 P-23 3,300 gal..
- 1995 P-23 3,300 gal.
- 1987 Oshkosh 1,000 gallon (most used for wildland suppression).
- 2001 Colet, 1,500 gal.
- 1,000 gallon foam trailer.

## **Water Tenders**

- 1994 2WD 5,000 gal. Westmark.

The department also has mutual aid agreements with the Mountain Home departments as well as with the BLM and Grand View RFP. The Hazardous Materials and extrication units are also available on a mutual aid need. Mutual aid response is contingent on activity at the air base. When multiple missions are flown from Mountain Home, the equipment may not be available in order to assure quick response in the event of a crash incident.

### **4.6.2.6 Grand View Rural Fire Protection**

P.O. Box 54  
Grand View ID  
Cfireman1@wmconnect.com  
208-834-2380

Grand View Rural Fire Protection District encompasses 111 sq. miles, including portions of Owyhee County, Elmore County, and the city of Grand View. The department responds to wildland, structural and agricultural fire. Grand View has mutual aid agreements with the surrounding fire protection districts, as well as with the BLM

*Personnel:* Grand View has a total of ten volunteer positions, including the chief and assistant.

*Fire Station:* The fire station is a single level, five bay facility.

*Equipment:*

## **Wildland Engines**

- 1994 Ford F-350, 300 gallon.
- 1995 GMC 3500, 275 gallon with foam capabilities.
- 1978 Ford F-7000, 1,000 gallon.

## **Structural Engines**

- 1961 Howe International, 500 gallon

## **Water Tenders**

- 1984 Kenworth, 3,000 gallons (will be operational in the summer of 2004).

*First Aid:* Grand View provides Basic Life Support (BLS)

*Resource Concerns within the district:* In addition to protection of life and homes, Grandview RFD has significant economic resources that are potentially threatened by fire. The majority of the district within Elmore County is owned by Simplot. Much of this land is cultivated hay. Historically, the ridge above the feed lot has experienced a high number of fires, potentially due to the presence of power transmission lines. The hay resources are seen to be at some risk to loss from fires originating from this or some other ignition source.

## ***4.7 Issues Facing Elmore County Fire Protection***

**Lack of Communications with Army Bombing Range-** There has been an inability to communicate with Army resources when responding to mutual aid fires involving Army lands. Communications need to be established between the Army and surrounding RFD's in order to fight fires safely and effectively. The Army should be incorporated into this planning activity.

**Tipinuk Area-** Residents in the Tipinuk area are without any form of structural fire protection, Tipinuk residents are not subscribing members to the nearby and newly created Oasis fire department. The BLM has wildland fire protection in the area, however the response time for BLM resources responding from Boise is considerable. Fast moving range fires could easily move into the settled area prior to the arrival of BLM resources. The residents are not willing to pay, on either a tax or subscription basis. Although Oasis does not currently have structural fire capabilities, the department does plan on assuming structural protection in the future. Certainly, the proximity of the wildland resources of the Oasis department would reduce the potential for loss to rangefires, if the residents were willing to pay for protection.

## ***4.8 Current Wildfire Mitigation Activities in Elmore County***

**Permanent Fuel Break along I-84-** The BLM is currently working to establish a permanent fuel break along the I-84 corridor from Stage Stop to Glenn's Ferry in order to reduce the potential for ignitions originating from the highway to spread into the surrounding lands. The BLM plans to spray the herbicide "Plateau" along the interstate in order to reduce the prevalence of cheatgrass, an exotic grass species that is highly flammable and invasive. Treated areas would then be replanted with Crested Wheatgrass, which is considered to be a retardant (less susceptible) to fire spread.

**SCA Home Evaluations-** The Student Conservation Association-Fire Education Corps. conducted home defensibility assessments in the Featherville area (2003-04). The Student Conservation Association's Team Duck Valley was brought in by the Bureau of Indian Affairs and the Southwest Idaho RC&D to educate home owners on the value of defensible space in the event of a wildfire.

Due to the geographical and cultural diversities of these two sites (Pine-Featherville vs. Duck Valley Indian Reservation), different methodologies were used with different goals in mind. On the Duck Valley Indian Reservation, the residents are very familiar with the effects of wildfire due to the large number of people employed by the Shoshone-Paiute Fire Department. Therefore, the team established action as being the most important goal. In the Pine/Featherville corridor in Idaho, education and exposure became the primary goals. They discovered that many people had vacation homes there and did not realize that there were ways to improve the vegetation around their "get-aways" without altering the landscape in a negative way. The residents on the reservation were less concerned with the aesthetic and more concerned for their homes and elders' safety.

Team Duck Valley utilized many different methods of outreach to accomplish these goals including: home evaluations (risk assessments), educational community meetings, newspaper articles, fire tips of the week, canvassing with educational material, a mass mailing, presence at a public event, and fuel reduction demonstrations.

The accomplishments for the 2003 fire season are as follows:

- Completed 69 home evaluations for fire risk assessment
- Plotted and data collected all 69 home evaluations with GPS unit

- Mass mailing pertaining to fuels reduction to 443 residents
- Canvassed 128 homes with wild fire education literature
- Organized and completed 4 fuel reduction demonstrations
- Held 4 community education meetings featuring highlights from the “Living with Fire” presentation applicable to correct vegetation zone
- Conducted 1 campfire presentation for youth discussing campfire safety
- Displayed table at 4<sup>th</sup> of July public event
- Displayed at Pine Senior Center reviewing fuels reduction success and providing information for future reductions with community involvement
- Published 4 Articles in Local Newspapers throughout fire season
- Posted weekly tips for defensible space
- Assisted County and Reservation Fire Mitigation Work Groups
- Participated in Fuel Reduction Demonstration for Garden Valley
- Collected vegetation information for area not previously surveyed
- Assisted with and participated in all Tribal Emergency Response Commission meetings and workgroups
- Organized planning committees for implementation of E-911 program
- Collected and processed data for E-911 program, creating an updated structure layer for tribal use

## Chapter 5: Treatment Recommendations

### 5 Overview

Critical to the implementation of this Wildland-Urban Interface Wildfire Mitigation Plan will be the identification of, and implementation of, an integrated schedule of treatments targeted at achieving an elimination of the lives lost, and reduction in structures destroyed, infrastructure compromised, and unique ecosystems damaged that serve to sustain the way-of-life and economy of Elmore County and the region. Since there are many land management agencies and hundreds of private landowners in Elmore County, it is reasonable to expect that differing schedules of adoption will be made and varying degrees of compliance will be observed across all ownerships.

The Federal land management agencies in Elmore County, specifically the USDA Forest Service and the Bureau of Land Management, are participants in this planning process and have contributed to its development. Where available, their schedule of WUI treatments has been summarized in this chapter (Section 4.6) to better facilitate a correlation between their identified planning efforts and the efforts of Elmore County.

#### 5.1 Possible Fire Mitigation Activities

As part of the implementation of fire mitigation activities in Elmore County, a variety of management tools may be used. Management tools include but are not limited to the following:

- Homeowner and landowner education
- Building code changes for structures and infrastructure in the WUI
- Home site defensible zone through fuels modification
- Community defensible zone fuels alteration
- Access improvements
- Access creation
- Emergency response enhancements (training, equipment, locating new fire stations, new fire districts)
- Regional land management recommendations for private, state, and federal landowners

Maintaining private property rights will continue to be one of the guiding principles of this plan's implementation. Sound risk management is a foundation for all fire management activities. Risks and uncertainties relating to fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity. Net gains to the public benefit will be an important component of decisions.

#### 5.2 WUI Safety & Policy

Wildfire mitigation efforts must be supported by a set of policies and regulations at the county level that maintain a solid foundation for safety and consistency. The recommendations enumerated here serve that purpose. Because these items are regulatory in nature, they will not necessarily be accompanied by cost estimates. These recommendations are policy related in nature and therefore are recommendations to the appropriate elected officials; debate and formulation of alternatives will serve to make these recommendations suitable and appropriate.

As part of the Policy of Elmore County in relation to this planning document, this entire **Wildland-Urban Interface Wildfire Mitigation Plan** should be reviewed annually at a special meeting of the Elmore County Commissioners, open to the public, where action items, priorities, budgets, and modifications can be made or confirmed. A written review of the plan should be approved by the Chairman of the County Commissioners, detailing plans for the year's activities, and made available to the general public ahead of the meeting (in accord with the Idaho Open Public Meeting Laws). Amendments to the plan should be detailed at this meeting, documented, and attached to the formal plan as an amendment to the WUI Wildfire Mitigation Plan (signatures by the cooperators would be collected at the Chairman's discretion). Re-evaluation of this plan should be made on the 5<sup>th</sup> anniversary of its acceptance, and every 5-year period following.

Prioritization of activities recommended in this plan should be made by the Elmore County Commissioners consistent with the recommendations made in Chapter 1 of this document. During the annual review of this plan, reprioritization can be justified in response to changing conditions and funding opportunities.

### **5.2.1 Existing Practices That Should Continue**

Elmore County currently is implementing many projects and activities that, in their absence, could lead to increased wildland fire loss potential. By enumerating some of them here, it is the desire of the authors to point out successful activities.

- Existing rural addressing efforts have aided emergency responses well.
- The Enhanced 911 service implemented across the county is an excellent service to tie in with fire protection districts.
- Rural signposting across the county is at an incredibly high standard with road names and USFS road numbers identified. This is a model for the rest of the state to follow.
- The development and implementation of the County's Comprehensive Growth Plan dove-tails with this planning effort well.

## 5.2.2 Proposed Activities

Table 5.1. WUI Action Items in Safety and Policy.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<p><b>5.1.a: Consider amending existing building codes to apply equally to new single housing construction as it does to sub-divisions.</b> Make sure existing policy is comprehensive to wildland fire risks.</p>	<p><b>Protection of people and structures</b> by applying a standard of road widths, access, and building regulations suitable to insure new homes can be protected while minimizing risks to firefighters. (defensible space, roads and access management, water systems, building codes, signage, and maintenance of private forest and range lands)</p>	<p><b>County Commissioners</b> in cooperation with Rural Fire Districts and Planning and Zoning.</p>	<ul style="list-style-type: none"> <li>• Year 1 debate and adoption of revised code (2004).</li> <li>• Review adequacy of changes annually, make changes as needed.</li> </ul>
<p><b>5.1.b: Develop County policy concerning building materials used in high-risk WUI areas on existing structures and new construction</b></p>	<p><b>Protection of people and structures</b> by improving the ability of emergency response personnel to respond to threatened homes in high-risk areas.</p>	<p><b>County Commissioners Office</b> in cooperation with Rural Fire Departments</p>	<p><b>Year 1 (2004) activity:</b> Consider and develop policy to address construction materials for homes and businesses located in high wildfire risk areas. Specifically, a County policy concerning wooden roofing materials and flammable siding, especially where juxtaposed near heavy wildland fuels.</p>
<p><b>5.1.c: Develop a formal WUI Advisory Committee to advise County Commissioners on WUI Issues and Treatments</b></p>	<p><b>Protection of people and structures</b> by improving the ability of decision makers to make informed decisions about wildfire issues.</p>	<p><b>County Commissioners Office</b></p>	<p><b>Year 1 (2004) activity:</b> Formalize a committee, its membership and service decided on by the County Commissioners, to collaborate on WUI issues within Elmore County. Members potentially to include land management organizations and companies, private landowners, and fire protection personnel.</p>
<p><b>5.1.d: Develop a County Commissioner’s Office policy to support the applications for grant monies for projects resulting from recommendations in this plan.</b></p>	<p><b>Protection of people and structures</b> by improving the ability of residents and organizations to implement sometimes costly projects.</p>	<p><b>County Commissioners Office</b></p>	<p><b>Ongoing activity:</b> Support grant applications as requested in a manner consistent with applications from residents and organizations in Elmore County.</p>

### **5.3 People and Structures**

The protection of people and structures will be tied together closely as the loss of life in the event of a wildland fire is generally linked to a person who could not, or did not, flee a structure threatened by a wildfire. The other incident is a fire fighter who suffers the loss of life during the combating of a fire. Many of the recommendations in this section will define a set of criteria for implementation while others will be rather specific in extent and application.

Many of the recommendations in this section involve education and increasing awareness of the residents of Elmore County. These recommendations stem from a variety of factors including items that became obvious during the analysis of the public surveys, discussions during public meetings, and observations about choices made by residents living in the Wildland-Urban Interface. Over and over, the a common theme was present that pointed to a situation of landowners not recognizing risk factors:

- Homeowners in the public mail survey ranked their home site wildfire risk factors significantly lower than a random sample of home rankings completed by fire mitigation specialists.
- Fire District personnel pointed to numerous examples of inadequate access to homes of people who believe they have adequate ingress.
- Discussions with the general public indicated an awareness of wildland fire risk, but they could not specifically identify risk factors.
- Over half of the respondents to the public mail survey indicated (62%) that they want to participate in educational opportunities focused on the WUI and what they can do to increase their home's chances of surviving a wildfire.

In addition to those items enumerated in Table 5.2, residents and policy makers of Elmore County should recognize certain factors that exist today, that in their absence would lead to an increase in the risk factors associated with wildland fires in the WUI of Elmore County. These items listed below should be encouraged, acknowledged, and recognized for their contributions to the reduction of wildland fire risks:

- **Livestock Grazing** in and around the communities of Elmore County can reduce fine fuels to various levels and have done so in recent times. Domestic livestock graze on grasses, forbs, and certain shrubs in the area. During grazing related activities, some trampling effects may occur at various levels on certain fine fuels in the area. Ranchers tending their herds, or other resource professional in the field may observe ignition or potentially risk-related activities in and around the communities of the county. Livestock grazing in this region should be considered into the future as a low-cost, positive tool of wildfire mitigation for the wildland-urban interface in this area.
- **Forest Management** in Elmore County has been affected greatly by the reduction of operating sawmills in the region. However, the active forest management program of the Idaho Department of Lands, and many of the private and industrial forestland owners in the region has led to a significant reduction of wildland fuels where they are closest to homes and infrastructure. An excellent example of this has already been highlighted in this document involving the Idaho Department of Lands management of forestlands around the community of Prairie. In addition, forest resource professionals managing these lands, and the lands of the private owners and federal agencies are generally trained in wildfire protection and recognize risk factors when they occur. One of the



reasons that Elmore County forestlands have not been impacted by wildland fires to a greater degree historically, is the presence and activities related to active forest management.

- **Agriculture** is a significant component of Elmore County's economy. Much of the southern portion of the county is intermixed with agricultural crops. The original conversion of these lands to agriculture from rangeland, was targeted at the most productive soils and juxtaposition to infrastructure. Many of these productive ecosystems were consequently also at some of the highest risk to wildland fires because biomass accumulations increased in these productive landscapes. The result today, is that much of the rangeland historically prone to frequent fires, has been converted to agriculture, which is at a much lower risk than prior to its conversion. The preservation of a viable agricultural economy in Elmore County is integral to the continued management of wildfire risk in this region.

**Table 5.2. WUI Action Items for People and Structures.**

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<b>5.2.a: Youth and Adult Wildfire Educational Programs</b>	<b>Protect people and structures</b> by increasing awareness of WUI risks, how to recognize risk factors, and how to modify those factors to reduce risk	Cooperative effort including: <ul style="list-style-type: none"> <li>• University of Idaho Cooperative Extension</li> <li>• Idaho Department of Lands</li> <li>• USFS Boise National Forest, Sawtooth National Forest, and State and Private Forestry Office</li> <li>• Bureau of Land Management</li> <li>• Local School Districts</li> </ul>	To start immediately using existing educational program materials and staffing. Formal needs assessment should be responsibility of University of Idaho Cooperative Extension faculty and include the development of an integrated WUI educational series by year 3 (2006). Costs initially to be funded through existing budgets for these activities to be followed with grant monies to continue the programs as identified in the formal needs assessment.
<b>5.2.b: Wildfire risk assessments of homes in identified communities</b>	<b>Protect people and structures</b> by increasing awareness of specific risk factors of individual home sites in the at-risk landscapes. Only after these are completed can home site treatments follow.	To be implemented by <b>County Commissioners Office</b> in cooperation with the <b>Rural Fire Departments</b> . Actual work may be completed by Wildfire Mitigation Consultants or trained volunteers.	<ul style="list-style-type: none"> <li>• <b>Cost:</b> Approximately \$100 per home site for inspection, written report, and discussions with the homeowners.</li> <li>• There are approximately 10,500 housing units in Elmore County, roughly 1,200 (11%) of these structures would benefit from a home site inspection and budget determination for a total cost estimate of \$120,000.</li> <li>• <b>Action Item:</b> Secure funding and contract to complete the inspections during years 1 &amp; 2 (2004-05)</li> <li>• Home site inspection reports and estimated budget for each home site's treatments will be a requirement to receive funding for treatments through grants.</li> </ul>
<b>5.2.c: Home Site WUI Treatments</b>	<b>Protect people, structures, and increase fire fighter safety</b> by reducing the risk factors surrounding homes in the WUI of Elmore County	<p><b>County Commissioners</b> in cooperation with Fire Mitigation Consulting company and Rural Fire Districts</p> <p><i>Complete concurrently with 5.2.b.</i></p>	<ul style="list-style-type: none"> <li>• Actual funding level will be based on the outcomes of the home site assessments and cost estimates</li> <li>• <b>Estimate</b> that treatments will cost approximately \$1,000 per home site for a defensible space of roughly 150'. Approximately 4,000 homes in this category for an estimated cost of \$4,000,000. Total home and business (non-governmental) assessed value in County is roughly \$449 million (average \$48,411): <b>B/C Ratio of this treatment is approximately 112:1</b>, when considered across the entire county. Actual B/C ration will vary by community.</li> <li>• Home site treatments can begin after the securing of funding for the treatments and immediate implementation in 2004 and will continue from year 1 through 5 (2008).</li> </ul>

**Table 5.2. WUI Action Items for People and Structures.**

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<b>5.2.d: Community Defensible Zone WUI Treatments</b>	<b>Protect people, structures, and increase fire fighter safety</b> by reducing the risk factors surrounding high risk communities in the WUI of Elmore County	<b>County Commissioners</b> in cooperation with Fire Mitigation Consultants and Rural Fire Districts	<ul style="list-style-type: none"> <li>• Actual funding level will be based on the outcomes of the home site assessments and cost estimates.</li> <li>• <b>Years 2-5 (2004-08):</b> Treat high risk wildland fuels from home site defensible space treatments (4.4.c) to an area extending 400 feet to 750 feet beyond home defensible spaces, where steep slopes and high accumulations of risky fuels exist. Should link together home treatment areas. Treatments target high risk concentrations of fuels and not 100% of the area identified. To be completed only after or during the creation of home defensible spaces have been implemented.</li> <li>• <b>Communities and areas to target:</b> Atlanta, Prairie, Pine, Featherville, Anderson Dam Road area, Oasis, King Hill, and Tipanuk.</li> <li>• Approximate average cost on a per structure basis is \$750-\$1,500 depending on extent of home defensibility site treatments, for a cost estimate of \$1.2 million. Couple this cost with the home defensibility space costs of \$4.0 million. The number of structures to benefit from these treatments include the 1,200 structures receiving home site treatments plus an estimated 3,250 more structures. <b>The average B/C Ratio for these treatments combined in Elmore County is 41:1.</b> Actual B/C ration by community will be variable.</li> </ul>
<b>5.2.e: Maintenance of Home Site WUI Treatments</b>	<b>Protect people, structures, and increase fire fighter safety</b> by reducing the risk factors surrounding homes in the WUI of Elmore County	<b>County Commissioners Office</b> in cooperation with Rural Fire Departments and local home owners	<ul style="list-style-type: none"> <li>• Home site defensibility treatments must be maintained periodically to sustain benefits of the initial treatments.</li> <li>• Each site should be assessed 5 years following initial treatment</li> <li>• Estimated re-inspection cost will be \$50 per home site on all sites initially treated or recommended for future inspections (\$60,000)</li> <li>• Follow-up inspection reports with treatments as recommended years 5 through 10.</li> </ul>
<b>5.2.f: Re-entry of Home Site WUI Treatments</b>	<b>Protect people, structures, and increase fire fighter safety</b> by reducing the risk factors surrounding homes in the WUI of Elmore County	<b>County Commissioners Office</b> in cooperation with Rural Fire Departments and local home owners	<ul style="list-style-type: none"> <li>• Re-entry treatments will be needed periodically to maintain the benefits of the initial WUI home treatments. Each re-entry schedule should be based on the initial inspection report recommendations, observations, and changes in local conditions. Generally occurs every 5-10 years.</li> </ul>

**Table 5.2. WUI Action Items for People and Structures.**

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<p><b>5.2.g: Access Improvements of bridges, cattle guards, and limiting road surfaces</b></p>	<p><b>Protection of people, structures, infrastructure, and economy</b> by improving access for residents and fire fighting personnel in the event of a wildfire. Reduces the risk of a road failure that leads to the isolation of people or the limitation of emergency vehicle and personnel access during an emergency.</p>	<p><b>County Roads and Bridges Department</b> in cooperation with US Forest Service, BLM, State of Idaho (Lands and Transportation), and forestland or rangeland owners.</p>	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Update existing assessment of travel surfaces, bridges, and cattle guards in Elmore County as to location. Secure funding for implementation of this project (grants)</li> <li>• <b>Year 2 (2005):</b> Conduct engineering assessment of limiting weight restrictions for all surfaces (e.g., bridge weight load maximums). Estimate cost of \$150,000 which might be shared between County, USFS, BLM, State, and private based on landownership associated with road locations.</li> <li>• <b>Year 2 (2005):</b> Post weight restriction signs on all crossings, copy information to rural fire districts and wildland fire protection agencies in affected areas. Estimate cost at roughly \$25-\$30,000 for signs and posting.</li> <li>• <b>Year 3 (2006):</b> Identify limiting road surfaces in need of improvements to support wildland fire fighting vehicles and other emergency equipment. Develop plan for improving limiting surfaces including budgets, timing, and resources to be protected for prioritization of projects (benefit/cost ratio analysis). Create budget based on full assessment.</li> </ul>
<p><b>5.2.h: Access Improvements and Creation of Fuel Breaks within and surrounding Oasis Fire District.</b></p>	<p><b>Protection of people, structures, infrastructure, and economy</b> by improving access and safety of residents and fire fighting personnel in the event of a wildfire. Allows for alternative escape route when the primary access is compromised.</p>	<p><b>County Roads and Bridges Department</b> in cooperation with US Forest Service, BLM, State of Idaho (Lands and Transportation).</p>	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Update assessments of Oasis area roads to facilitate better management in the wildland urban interface. Secure funding for implementation of this project.</li> <li>• <b>Year 2 (2005):</b> Secure funding and implement projects to improve limiting access along this road to facilitate broader range of vehicles using this route as an emergency route. No estimate of costs until priorities are set and options identified.</li> </ul>
<p><b>5.2.i: Access Improvements for community of Atlanta: James Creek Road.</b></p>	<p><b>Protection of people, structures, infrastructure, and economy</b> by improving access for residents and fire fighting personnel in the event of a wildfire. Allows for alternative escape route.</p>	<p><b>County Roads and Bridges Department</b> in cooperation with US Forest Service, BLM, State of Idaho (Lands and Transportation).</p>	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Update existing assessment of James Creek Roads as to limiting areas of road and bridges. Secure funding for implementation of this project.</li> <li>• <b>Year 2 (2005):</b> Secure funding and implement projects to improve limiting access along this road to facilitate broader range of vehicles using this route as an emergency route. No estimate of costs until priorities are set and options identified.</li> </ul>

**Table 5.2. WUI Action Items for People and Structures.**

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
<p><b>5.2.j: Access Improvements through road-side fuels management:</b> Middle Fork of Boise River Road, James Creek Road, Anderson Dam Road area, Pine-Featherville Road, and Prairie area Roads.</p>	<p><b>Protection of people, structures, infrastructure, and economy</b> by improving access for residents and fire fighting personnel in the event of a wildfire. Allows for a road based defensible area that can be linked to a terrain based defensible areas.</p>	<p><b>County Roads and Bridges Department</b> in cooperation with US Forest Service, BLM, State of Idaho (Lands and Transportation), and forestland or rangeland owners.</p>	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Update existing assessment of roads in Elmore County as to location. Secure funding for implementation of this project (grants).</li> <li>• <b>Year 2 (2005):</b> Specifically address access issues listed in column one, plus recreation areas, and others identified in assessment. Target 100' on downhill side of roads and 75' on uphill side for estimated cost of \$15,000 per mile of road treated. If 150 miles of roadway are prioritized for treatment (est.) the cost would amount to \$2.25 million. <b>B/C Ratio of 96:1 is achieved</b>, but is highly variable.</li> <li>• <b>Year 3 (2006):</b> Secure funding and implement projects to treat road-side fuels.</li> </ul>

## 5.4 Infrastructure

Significant infrastructure refers to the communications, transportation (road and rail networks), energy transport supply systems (gas and power lines), and water supply that service a region or a surrounding area. All of these components are important to Elmore County. These networks are by definition a part of the Wildland-Urban Interface in the protection of people, structures, **infrastructure**, and unique ecosystems. Without supporting infrastructure a community's structures may be protected, but the economy and way of life lost. As such, a variety of components will be considered here in terms of management philosophy, potential policy recommendations, and on-the-ground activities.

**Communication Infrastructure:** This component of the WUI seems to be diversified across the county with multiple source and destination points, and a spread-out support network. Although site specific treatments will impact directly local networks, little needs done to insure the system's viability.

**Transportation Infrastructure (road and rail networks):** This component of the WUI has some potential limitations in Elmore County. The hub of Elmore County's transportation network is located in Mountain Home (as is the County Seat), and the remainder of the areas near the Snake River. Specific infrastructure components have been discussed in this plan.

Potential treatments in reference to the rail lines crossing Elmore County will be discussed in a subsequent section.

Ignitions along Interstate 84 are significant and should be addressed as part of the implementation of this plan. Various alternatives from herbicides to intensive livestock grazing coupled with mechanical treatments, have been suggested. As part of the multi-agency team WUI team proposed in the previous section, this entire corridor should be further evaluated with alternatives implemented. A variety of approaches will be appropriate depending on the landowner, fuels present, and other factors. These ignitions are substantial and the potential risk of lives to residents in the area is significant.

Many roads in the county have limiting characteristics, such as steep grades, narrow travel surfaces, sharp turning radii, low load limit bridges and cattle guards, and heavy accumulations of fuels adjacent to, and overtopping some roads. Some of these road surfaces access remote forestland and rangeland areas. While their improvements will facilitate access in the case of a wildfire, they are not necessarily the priority for treatments in the county.

Roads that have these inferior characteristics and access homes and businesses are the priority for improvements in the county. Specific recommendations for these roads are enumerated in Table 5.3.

**Energy Transport Supply Systems (gas and power lines):** During the Hall Fire in nearby Adams County, the high tension power lines maintained by Idaho Power that cross the region from the Snake River to McCall and then to Riggins were threatened by heat, smoke and particulate matter in the smoke. The power lines were at risk to arcing and potentially failure. Fortunately, power was not lost to the communities of Adams and Valley counties as a result of the fire, but it did point to the need for an increased focus on fuels management under and immediately adjacent to the high tension power lines in this region (Elmore County - Appendix I).

A number of power lines crisscross Elmore County. Because of the location, Elmore County's land surfaces provide access to power supplies and population centers in Idaho and parts of Oregon. Fortunately, most of these power lines cross over rangeland ecosystems. When fires ignite in these vegetation types, the fires tend to be fast moving and burn at lower intensities.

However, when these sagebrush communities become very mature and thick, there is a potential for high temperatures and low humidity with high winds to produce enough heat and smoke to threaten power line stability. Observations across the county of these high tension power lines lead to the conclusion that current agricultural uses coupled with livestock grazing and urban developments have mitigated this potential substantially. It is the recommendation of this Wildfire Mitigation Plan that this situation be evaluated annually and monitored but that treatments not be specifically targeted at this time. The use of these areas as “fire breaks” should be evaluated further, especially in light of the treatments enumerated in this plan (eg., intensive livestock grazing, mechanical treatments, and herbicide treatments).

**Water Supply:** In many of Idaho’s communities, water is derived from surface flow that is treated and piped to homes and businesses. When wildfires burn a region, they threaten these watersheds by the removal of vegetation, creation of ash and sediment. As such, watersheds should be afforded the highest level of protection from catastrophic wildfire impacts. In Elmore County, water is supplied to the majority of homes from single home or multiple home wells.

There are approximately 67 municipal water supply points recorded in Elmore County by the Idaho Water Resources Board. Sixty-four of these supplies are wells supplying residents with groundwater, two of these systems are spring-groundwater systems (City of Glens Ferry and Trinity Springs LTD), and one of these systems is a surface water collection system supplying drinking water to the community of Atlanta. It is the latter system which would potentially suffer the greatest potential loss in the county, because if this watershed burned then the community of Atlanta would potentially suffer the loss of drinking water via this system. Because of this, pre-planning for this watershed is recommended in the form of a watershed management plan that specifically addresses potential mitigation efforts to limit the negative impacts of a wildfire in this region while maintaining clean, sufficient water supplies.

Agricultural water supply from the region’s rivers and lakes is an important component of the viability of the regional economy (agriculture and ranching). These resources are at-risk to wildland fires. Their protection comes from the limiting of the extent and frequency of wildfires in any given watershed. Based on the analysis of past fires in Elmore County and the current status of wildland fire protection in the region, this component of the economy seems to be stable and reasonably protected. Changes to the status quo are not recommended at this time, in light of the other recommendations in this plan.

## ***5.5 Resource and Capability Enhancements***

There are a number of resource and capability enhancements identified by the rural and wildland fire fighting districts in Elmore County. For specific details on these comments, refer to section 4.6. All of the needs identified by the districts are in line with increasing the ability to respond to emergencies in the WUI and are fully supported by the planning committee.

Specific reoccurring themes of needed resources and capabilities include:

- More water tenders for Rural Fire Districts
- Improved radio capabilities within each district and for mutual aid operations
- Retention and recruitment of volunteers
- Training and development of rural firefighters in structure and wildland fire
- Enhancement of the newly formed Oasis Volunteer Fire Department
- Incorporation of Tipanuk into the Oasis VFD, or the formation of a new district specifically for the residents of Tipanuk.

The implementation of each issue will rely on either the isolated efforts of the fire districts or a concerted effort by the county to achieve equitable enhancements across all of the districts. Given historic trends, individual departments competing against neighboring departments for grant monies and equipment will not necessarily achieve county wide equity. However, the Southwestern Idaho Resource Conservation and Development Council may be an organization uniquely suited to work with all of the districts in Elmore County and adjacent counties to assist in the prioritization of needs across district and even county lines. Once prioritized, the RC&D is in a position to assist these districts with identifying, competing for, and obtaining grants and equipment to meet these needs.

**Table 5.3. WUI Action Items in Fire Fighting Resources and Capabilities.**

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<b>5.3.a: Obtain four 5,000 gallon water tenders for rural fire districts.</b>	<b>Protection of people and structures</b> by direct fire fighting capability enhancements.	<b>Rural fire districts and the County Commissioners</b> in cooperation with the <b>Southwest Idaho Resource Conservation and Development Council.</b>	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Verify stated need still exists, develop budget, and locate funding or equipment (surplus) sources.</li> <li>• <b>Year 1 or 2 (2004-05):</b> Acquire and deliver needed equipment to districts based on prioritization by need and funding awards.</li> </ul>
<b>5.3.b: Enhance radio availability in each district, link in to existing dispatch, and improve range within the region, update to new digital, narrow band frequency adopted by feds and state.</b>	<b>Protection of people and structures</b> by direct fire fighting capability enhancements.	<b>Rural fire districts and the County Commissioners</b> in cooperation with the <b>Southwest Idaho Resource Conservation and Development Council.</b>	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Summarize existing two-way radio capabilities and limitations. Identify costs to upgrade existing equipment and locate funding opportunities.</li> <li>• <b>Year 2 (2005):</b> Acquire and install upgrades as needed.</li> <li>• <b>Year 2-3 (2005-06):</b> Identify opportunities for radio repeater towers located in the region for multi-county benefits.</li> </ul>
<b>5.3.c: Facility, land, business plan and basic supplies for Oasis Volunteer Fire District.</b>	<b>Protection of people and structures</b> by direct fire fighting capability enhancements.	<b>Oasis VFD and the County Commissioners</b> in cooperation with the <b>Southwest Idaho Resource Conservation and Development Council.</b>	<ul style="list-style-type: none"> <li>• Estimate of Costs:               <ul style="list-style-type: none"> <li>○ \$125,000</li> </ul> </li> <li>• <b>2 Year Planning Horizon</b></li> </ul>
<b>5.3.d: Retention of Volunteer Fire Fighters</b>	<b>Protection of people and structures</b> by direct fire fighting capability enhancements.	<b>Rural and Wildland Fire Districts</b> working with broad base of county citizenry to identify options, determine plan of action, and implement it.	<ul style="list-style-type: none"> <li>• 5 Year Planning Horizon, extended planning time frame</li> <li>• Target an increased recruitment (+10%) and retention (+20% longevity) of volunteers</li> <li>• <b>Year 1 (2004):</b> Develop</li> </ul>



**Table 5.3. WUI Action Items in Fire Fighting Resources and Capabilities.**

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<b>5.3.e: Increased training and capabilities of fire fighters</b>	<b>Protection of people and structures</b> by direct fire fighting capability enhancements.	<b>Rural and Wildland Fire Districts</b> working with the <b>BLM and USFS</b> for wildland training opportunities and with the <b>State Fire Marshall's Office</b> for structural fire fighting training.	incentives program and implement it. <ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Develop a multi-county training schedule that extends 2 or 3 years in advance (continuously).</li> <li>• Identify funding and resources needed to carry out training opportunities and sources to acquire.</li> <li>• Year 1 (2004): Begin implementing training opportunities for volunteers.</li> </ul>
<b>5.3.f: Assistance to Atlanta Rural Fire Department</b>	<b>Protection of people and structures</b> by direct fire fighting capability enhancements.	<b>Atlanta fire district and the County Commissioners</b> in cooperation with the <b>Southwest Idaho Resource Conservation and Development Council.</b>	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Develop specific needs assessment with community for structural and wildland resources tied in with USFS resources projections</li> <li>• Identify funding and resources needed to carry out assistance.</li> <li>• Year 2 (2005): Begin implementing opportunities for district.</li> </ul>
<b>5.3.g: Extension to Facility for Glens Ferry Rural Fire District.</b>	<b>Protection of people and structures</b> by direct fire fighting capability enhancements.	<b>Glens Ferry fire district and the County Commissioners</b> in cooperation with the <b>Southwest Idaho Resource Conservation and Development Council.</b>	<ul style="list-style-type: none"> <li>• Year 1 (2004): develop cost estimates and secure funding.</li> <li>• <b>2 Year:</b> Implement expansion to get equipment into cover facility.</li> </ul>
<b>5.3.h: Creation of Pine-Featherville Rural Fire District.</b> Due to demographics, most likely will need to be created as a paid staff station, not a volunteer based department.	<b>Protection of people and structures</b> by direct fire fighting capability creation.	<b>Local citizens, wildland fire districts and the County Commissioners</b> in cooperation with the <b>Southwest Idaho Resource Conservation and Development Council.</b>	<ul style="list-style-type: none"> <li>• Year 1 (2004): Recruit volunteers in community and develop cost estimates then secure funding.</li> <li>• <b>2 Year:</b> Implement creation of new district (this is a significant achievement in the protection of a large number of residents and visitors).</li> </ul>
<b>5.3.i: Creation of Prairie Rural Fire District</b>	<b>Protection of people and structures</b> by direct fire fighting capability creation.	<b>Local citizens, wildland fire districts and the County Commissioners</b> in cooperation with the <b>Southwest Idaho</b>	<ul style="list-style-type: none"> <li>• Year 1 (2004): Recruit volunteers in community and develop cost estimates then secure funding.</li> </ul>

**Table 5.3. WUI Action Items in Fire Fighting Resources and Capabilities.**

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.3.i: Creation of Tipanuk Rural Fire District	Protection of people and structures by direct fire fighting capability creation.	Resource Conservation and Development Council.  Local citizens, wildland fire districts and the County Commissioners in cooperation with the Southwest Idaho Resource Conservation and Development Council.	<ul style="list-style-type: none"> <li>• <b>2 Year:</b> Implement creation of new district (this is a significant achievement in the protection of a large number of residents and visitors).</li> <li>• <b>Year 1 (2004):</b> Recruit volunteers in community and develop cost estimates then secure funding.</li> <li>• <b>2 Year:</b> Implement creation of new district (this is a significant achievement in the protection of residents in a high risk area).</li> </ul>
5.3.j: Obtain one multi-purpose roadable dozer for Oasis Volunteer Fire Department.	Protection of people and structures by direct fire fighting capability enhancements.	Oasis Volunteer Fire Department, BLM, and the County Commissioners in cooperation with the Southwest Idaho Resource Conservation and Development Council.	<ul style="list-style-type: none"> <li>• <b>Year 1 (2004):</b> Verify stated need still exists, develop budget, and locate funding or equipment (surplus) sources.</li> <li>• <b>Year 1 or 2 (2004-05):</b> Acquire and deliver needed equipment to district based on prioritization by need and funding awards.</li> </ul>

## 5.6 Regional Land Management Recommendations

In section 5.3 of this plan, reference was given to the role that forestry, grazing and agriculture have in promoting wildfire mitigation services through active management. Elmore County is both a rural county and an urban center (Mountain Home). It is dominated by wide expanses of forest and rangelands intermixed with communities and rural houses.

Wildfires will continue to ignite and burn fuels and homes depending on the weather conditions and other factors enumerated earlier. However, active land management that modifies fuels, promotes healthy range and forestland conditions, and promotes the use of these natural resources (consumptive and non-consumptive) will insure that these lands have value to society and the local region. We encourage the US Forest Service, the Bureau of Land Management, the Idaho Department of Lands, Industrial land owners, private land owners, and all other landowners in the region to actively manage their Wildland-Urban Interface lands in a manner consistent with the management of reducing fuels and risks in this zone.

### 5.6.1 Fire Mitigation Opportunities and Elmore County/Lower Snake River District BLM

Rangeland in Elmore County, particularly the lower-elevation area between Boise and Hammett, has historically experienced significant wildfire activity. A high number of ignitions and

subsequent large fire growth frequently occur in a zone roughly bounded by Boise to the northwest, Hammett to the southeast, Interstate 84 on the north, and the Union Pacific Railroad tracks on the south. Investigations have shown these fires are most often ignited by vehicles or trains. The area is dominated by light, flashy fuels which, combined with normal winds, lead to quick ignitions, rapid fire spread, and large burns.

The fire hazards identified in this zone present the BLM and its partners a variety of opportunities to reduce the hazards and risk of wildfire. Some opportunities, either implemented or proposed, are discussed below.

#### **5.6.1.1 Railroad Right-of-Way**

There are a number of curves, grades, and sidings where trains may be prone to create sparks, eject hot stack carbon, or blow hot brake shoes, any one of which can easily ignite the light grassy fuels through the railroad corridor. In 2000, following several years of frequent railroad fires, the Lower Snake River District entered a partnership with Union Pacific Railroad to address this hazard. UPRR contributed funding and the BLM contributed both funding and staff to conduct prescribed burning along approximately 50 miles of right-of-way, on both sides of the tracks, in spring and early summer..

Removing the fuels by burning in the right-of-way was sufficient to cause a significant drop in the number of ignitions from trains through this area. The first year, there were no train-caused fires through this corridor following the burn project. While a few ignitions occurred following the project the second year, these were rare and represented only a fraction of the number historically experienced.

Due to funding limitations and other considerations in each of the past two years, this project has not been accomplished in 2002 or 2003. Fire managers hope to resume this program in the future.

#### **5.6.1.2 Interstate 84 Corridor**

Similar to the issues faced in the railroad right-of-way, the Interstate 84 corridor from Boise to Mountain Home, and to a lesser degree from Mountain Home to Glenns Ferry, has historically experienced significant numbers of wildfire ignitions and rapid fire spread. This corridor also contains light, flashy fuels that become tinder dry during the summer months and it has a high volume of traffic.

Ignitions often occur from such vehicle-related causes as pulling off the road into the grass for mechanical or other reasons, overheating, tire blow-outs, overheated or lost bearings, axle or electrical problems, and more. The portion of this corridor near the community of Tipanuk, northwest of Mountain Home, was identified in mitigation planning during 2001 as needing some form of fire break.

BLM fire and fuels managers, in cooperation with the Idaho Department of Transportation, are currently exploring methods and means to treat the right-of-way fuels and create a firebreak on both sides of, and in the median, of the Interstate from near Boise to Glenns Ferry. IDT currently contracts for mowing rights-of-way in a larger geographic area and the timing and frequency of mowing in the Boise-to-Glenns Ferry strip has not been sufficient to minimize fire hazards and ignitions.

Treatment options being explored range from the BLM, through the National Fire Plan, funding more frequent and time-focused mowing, to a complex, multi-year project involving mowing, herbicide applications, and seeding of more fire-resistant vegetation.

The completion of an area-wide environmental assessment, and field-testing and approval of an herbicide product focused on cheat grass control, both of which may be accomplished within the next year, may allow a comprehensive fuels management project to proceed through the I-84 corridor within the next few years. This treatment is also being considered for several other access and major roadways throughout the area.

In the short term, the BLM and IDT are exploring potential fuels treatments to reduce hazards in more localized projects focused on freeway interchanges and specific access roads.

Throughout the short- and long-term vision for fuels treatment in the I-84 corridor, consideration is being given for compliance with NEPA (National Environmental Protection Act) requirements, protection of existing stands of big sage, and other valued resources through the right-of-way.

### 5.6.1.3 Fence-line Tumbleweed Burning

During each of the past 3 years, LSRD fuels and fire staff have conducted burn projects along more than 30 miles of fence lines, including some fence lines along road and highway rights-of-way. This project has been designed to remove accumulations of tumbleweeds which create and contribute to a fire hazard. This work has been done primarily in the Orchard and Simco Road areas southeast of Boise. This project may continue in 2004 on a much smaller scale than in recent years.

### 5.6.1.4 General Projects

- Since 2000, a cooperative effort has been made to educate homeowners on a broad scale and conduct individual home assessments throughout the County. Participants in this work have included the Lower Snake River District, the Student Conservation Corps, the American Red Cross, the Mountain Home Fire Department, and others.
- For several years following the 250,000-acre Foothills Fire, Firewise literature and other homeowner information was distributed by the county to applicants and recipients of building permits. This effort waned after a few years but could be resumed in collaboration between the County and the BLM.
- Along with supporting several fire departments in the County through the Rural Fire Assistance program, LSRD officials are encouraging the formation of new departments where they're needed.

## 5.6.2 U.S. Forest Service WUI treatments being considered in Elmore County

The Boise National Forest has provided the following planned projects in Elmore County.

### 5.6.2.1 US Forest Service Project Development and Implementation Timeframes

**Table 5. 4. US Forest Service Project Development and Implementation Timeframes**

Project name	Planning Time Frame	Implementation Timeframe
Camp Creek Fuel-break	Decision memo signed in June 2003.	Implementation begun in July 2003. Completion expected in October 2004
Camp Creek Prescribed Burn	Decision Memo signed in June 2003	Implementation and completion expected in Spring 2005
Lime Creek Aspen Restoration Project	Decision Notice signed September 2001	Implementation begun in October 2002. Continue to treat 2000-3000 acres annually with prescribed fire until 2007.

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White Flat Resource Management Project	Complete Environmental Assessment by September 2004	Planned implementation for 2005 and continue for 1 to 2 years.
Knox Resource Management Project	Project scoping currently in progress. Environmental Assessment to be completed in 2005.	Implementation planned to commence in 2007
Atlanta South Fuels Reduction Project	Decision Notice signed July 2003.	Implementation to begin in 2004 and continue for the next 5 years.

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**Table 5. 5. US Forest Service Project Descriptions.**

<b>Project</b>	<b>Summary (Purpose and Need)</b>	<b>Benefits to the Community</b>	<b>Location</b>	<b>Description</b>	<b>Acres</b>
Camp Creek Fuel-break	Reduce hazardous fuels through thinning and prescribed burning in order to achieve Condition Class I along Forest Boundary adjacent to Wildland- Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources.	National Forest System Lands adjacent to the Fall Creek Overlook Subdivision; approximately 3 miles north of Fall Creek Lodge.	Mechanically remove <8" DBH trees and prune larger trees along National Forest System and private lands boundary.	65
Camp Creek Prescribed Burn	Reduce hazardous fuels through prescribed burning in order to achieve Condition Class I along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources.	National Forest System Lands adjacent to the Fall Creek Overlook Subdivision; approximately 3 miles north of Fall Creek Lodge.	Underburn to reduce hazard fuels on National Forest System lands adjacent private property.	635
Lime Creek Aspen Restoration Project	Reduce hazardous fuels, improve watershed function, and improve wildlife habitat. Restore the role of fire that was an integral part of aspen ecology.	Decrease the risk of large scale wildland fire event. Reduce potential for unhealthy air quality from smoke.	National Forest System Lands on Sawtooth and Boise National Forests. Approximately 6 miles east of Pine, ID.	Broadcast burn 2 to 3,000 acres Of aspen, shrub, and conifer stands to improve aspen health and vigor.	10,000
White Flat Resource Management Project	Reduce hazardous fuels through thinning and prescribed burning in order to achieve Condition Class I along Forest Boundary adjacent to Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatments.	National Forest System Lands adjacent to the Fall Creek Overlook Subdivision; approximately 3 miles north of Fall Creek Lodge.	Mechanically thin all size classes of trees and underburn National Forest System lands adjacent to private property boundaries.	1,100
Knox Creek Project	Reduce hazardous fuels through thinning and prescribed burning in order to achieve Condition Class I along Forest Boundary adjacent to Wildland-Urban Interface	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatments.	National Forest System Lands adjacent to Private property and other federally owned land north of Fall Creek Lodge.	Mechanically thin all size classes of trees and under burn National Forest System lands adjacent to private property boundaries.	2,200
Atlanta South Fuels Reduction Project	Establish stand conditions that provide for long-term establishment of a more natural fire regime that will enable development of a fire resilient ecosystem.	Decrease the risk of a wild land fire burning structures or forest resources.	National Forest System Lands adjacent to private property south of the town of Atlanta.	Treat forest vegetation with mechanical thinning.	600

## Chapter 6: Supporting Information

### 6

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## 6.2 List of Preparers

The following personnel participated in the formulation, compilation, editing, and analysis of alternatives for this assessment.

**Table 6.1. List of Preparers**

<b>Name</b>	<b>Affiliation</b>	<b>Role</b>
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**Table 6.1. List of Preparers**

<b>Name</b>	<b>Affiliation</b>	<b>Role</b>
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Wayne Forrey, AICP	Elmore County Coordinator	Local Coordinator

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### 6.3 Signature Pages

This **Elmore County Wildland-Urban Interface Wildfire Mitigation Plan** has been developed in cooperation and collaboration with the representatives of the following organizations, agencies, and individuals.

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By: Mary Egusquiza-Stanek, Chairperson  
Elmore County Commissioner

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Date

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By: Calvin Ireland  
Elmore County Commissioner

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Date

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By: Larry Rose  
Elmore County Commissioner

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Date

---

By: Joe B. McNeal  
Mayor–City of Mountain Home

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Date

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By: Glenn Thompson  
Mayor–City of Glenns Ferry

---

Date

---

By: District Ranger  
USDA Forest Service Mountain Home Ranger  
District

---

Date

---

By: Rosemary Thomas, Acting Field Manager  
Four Rivers Field Office, USDI BLM

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Date

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By:  
Atlanta Rural Fire Protection District

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Date

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By:  
Glenns Ferry City/ King Hill Rural Fire Department

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Date

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By: Chief Gridley  
Mountain Home City/Rural Fire

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Date

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By: Daniel M. Hennis, Chief  
Oasis Volunteer Fire Department

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Date

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By:  
Mountain Home AFB, Fire Protection

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Date

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By:  
Grand View Rural Fire Protection

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By: President  
Southwest Idaho RC&D

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By: Wayne Forrey–Coordinator  
Elmore County WUI Fire Mitigation Plan

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By: William E. Schlosser, Ph.D.  
Project Manager–Elmore County WUI Wildfire  
Mitigation Plan, Lead Author  
Forester–Northwest Management, Inc.

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Date

## 6.4 Glossary of Terms

**Anadromous** - Fish species that hatch in fresh water, migrate to the ocean, mature there, and return to fresh water to reproduce (Salmon & Steelhead).

**Appropriate Management Response** - Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

**Biological Assessment** - Information document prepared by or under the direction of the Federal agency in compliance with U.S. Fish and Wildlife standards. The document analyzes potential effects of the proposed action on listed and proposed threatened and endangered species and proposed critical habitat that may be present in the action area.

**Backfiring** - When attack is indirect, intentionally setting fire to fuels inside the control line to contain a rapidly spreading fire. Backfiring provides a wide defense perimeter, and may be further employed to change the force of the convection column.

**Blackline** - Denotes a condition where the fireline has been established by removal of vegetation by burning.

**Burning Out** - When attack is direct, intentionally setting fire to fuels inside the control line to strengthen the line. Burning out is almost always done by the crew boss as a part of line construction; the control line is considered incomplete unless there is no fuel between the fire and the line.

**Canyon Grassland** - Ecological community in which the prevailing or characteristic plants are grasses and similar plants extending from the canyon rim to the rivers edge.

**Confine** - Confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.

**Contingency Plans:** Provides for the timely recognition of approaching critical fire situations and for timely decisions establishing priorities to resolve those situations.

**Control Line** - An inclusive term for all constructed or natural fire barriers and treated fire edge used to control a fire.

**Crew** - An organized group of firefighters under the leadership of a crew boss or other designated official.

**Crown Fire** - A fire that advances from top to top of trees or shrubs more or less independently of the surface fire. Sometimes crown fires are classed as either running or dependent, to distinguish the degree of independence from the surface fire.

**Disturbance** - An event which affects the successional development of a plant community (examples: fire, insects, windthrow, timber harvest).

**Disturbed Grassland** - Grassland dominated by noxious weeds and other exotic species. Greater than 30% exotic cover.

**Diversity** - The relative distribution and abundance of different plant and animal communities and species within an area.

**Drainage Order** - Systematic ordering of the net work of stream branches, ( e.g., each non-branching channel segment is designated a first order stream, streams which only receive first order segments are termed second order streams).

**Duff** - The partially decomposed organic material of the forest floor beneath the litter of freshly fallen twigs, needles, and leaves.

**Ecosystem** - An interacting system of interdependent organisms and the physical set of conditions upon which they are dependent and by which they are influenced.

**Ecosystem Stability** - The ability of the ecosystem to maintain or return to its steady state after an external interference.

**Ecotone** - The area influenced by the transition between plant communities or between successional stages or vegetative conditions within a plant community.

**Energy Release Component** - The Energy Release Component is defined as the potential available energy per square foot of flaming fire at the head of the fire and is expressed in units of BTUs per square foot.

**Equivalent Clearcut Area (ECA)** - An indicator of watershed condition, which is calculated from the total amount of crown removal that has occurred from harvesting, road building, and other activities based on the current state of vegetative recovery.

**Exotic Plant Species** - Plant species that are introduced and not native to the area.

**Fire Adapted Ecosystem** - An arrangement of populations that have made long-term genetic changes in response to the presence of fire in the environment.

**Fire Behavior** - The manner in which a fire reacts to the influences of fuel, weather, and topography.

**Fire Behavior Forecast** - Fire behavior predictions prepared for each shift by a fire behavior analysis to meet planning needs of fire overhead organization. The forecast interprets fire calculations made, describes expected fire behavior by areas of the fire, with special emphasis on personnel safety, and identifies hazards due to fire for ground and aircraft activities.

**Fire Behavior Prediction Model** - A set of mathematical equations that can be used to predict certain aspects of fire behavior when provided with an assessment of fuel and environmental conditions.

**Fire Danger** - A general term used to express an assessment of fixed and variable factors such as fire risk, fuels, weather, and topography which influence whether fires will start, spread, and do damage; also the degree of control difficulty to be expected.

**Fire Ecology** - The scientific study of fire's effects on the environment, the interrelationships of plants, and the animals that live in such habitats.

**Fire Exclusion** - The disruption of a characteristic pattern of fire intensity and occurrence (primarily through fire suppression).

**Fire Intensity Level** - The rate of heat release (BTU/second) per unit of fire front. Four foot flame lengths or less are generally associated with low intensity burns and four to six foot flame lengths generally correspond to "moderate" intensity fire effects. High intensity flame lengths are usually greater than eight feet and pose multiple control problems.

**Fire Prone Landscapes** - The expression of an area's propensity to burn in a wildfire based on common denominators such as plant cover type, canopy closure, aspect, slope, road density, stream density, wind patterns, position on the hillside, and other factors.

**Fireline** - A loose term for any cleared strip used in control of a fire. That portion of a control line from which flammable materials have been removed by scraping or digging down to the mineral soil.

**Fire Management** - The integration of fire protection, prescribed fire and fire ecology into land use planning, administration, decision making, and other land management activities.

**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. This plan is supplemented by operational procedures such as preparedness, preplanned dispatch, burn plans, and prevention. The fire implementation schedule that documents the fire management program in the approved forest plan alternative.

**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. FMU's are delineated in FMP's. These units may have dominant management objectives and preselected strategies assigned to accomplish these objectives.

**Fire Occurrence** - The number of wildland fires started in a given area over a given period of time. (Usually expressed as number per million acres.)

**Fire Prevention** - An active program in conjunction with other agencies to protect human life, prevent modification, of the ecosystem by human-caused wildfires, and prevent damage to cultural resources or physical facilities. Activities directed at reducing fire occurrence, including public education, law enforcement, personal contact, and reduction of fire risks and hazards.

**Fire Regime** - The fire pattern across the landscape, characterized by occurrence interval and relative intensity. Fire regimes result from a unique combination of climate and vegetation. Fire regimes exist on a continuum from short-interval, low-intensity (stand maintenance) fires to long-interval, high-intensity (stand replacement) fires.

**Fire Retardant** - Any substance that by chemical or physical action reduces flareability of combustibles.

**Fire Return Interval** - The number of years between two successive fires documented in a designated area.

**Fire Risk** - The potential that a wildfire will start and spread rapidly as determined by the presence and activities of causative agents.

**Fire Severity** - The effects of fire on resources displayed in terms of benefit or loss.

**Foothills Grassland** - Grass and forb co-dominated dry meadows and ridges. Principle habitat type series: bluebunch wheatgrass and Idaho fescue.

**Fuel** - The materials which are burned in a fire; duff, litter, grass, dead branchwood, snags, logs, etc.

**Fuel Break** - A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled.

**Fuel Loading** - Amount of dead fuel present on a particular site at a given time; the percentage of it available for combustion changes with the season.

**Fuel Model** - Characterization of the different types of wildland fuels (trees, brush, grass, etc.) and their arrangement, used to predict fire behavior.

**Fuel Type** - An identifiable association of fuel elements of distinctive species; form, size, arrangement, or other characteristics, that will cause a predictable rate of fire spread or difficulty of control, under specified weather conditions.

**Fuels Management** - Manipulation or reduction of fuels to meet protection and management objectives, while preserving and enhancing environmental quality.

**Gap Analysis Program (GAP)** - Regional assessments of the conservation status of native vertebrate species and natural land cover types and to facilitate the application of this information to land management activities. This is accomplished through the following five objectives:

1. Map the land cover of the United States
2. Map predicted distributions of vertebrate species for the U.S.
3. Document the representation of vertebrate species and land cover types in areas managed for the long-term maintenance of biodiversity
4. Provide this information to the public and those entities charged with land use research, policy, planning, and management
5. Build institutional cooperation in the application of this information to state and regional management activities

**Habitat** - A place that provides seasonal or year-round food, water, shelter, and other environmental conditions for an organism, community, or population of plants or animals.

**Heavy Fuels** - Fuels of a large diameter, such as snags, logs, and large limbwood, which ignite and are consumed more slowly than flash fuels.

**Hydrologic Unit Code** - A coding system developed by the U. S. Geological Service to identify geographic boundaries of watersheds of various sizes.

**Hydrophobic** - Resistance to wetting exhibited by some soils, also called water repellency. The phenomena may occur naturally or may be fire-induced. It may be determined by water drop penetration time, equilibrium liquid-contact angles, solid-air surface tension indices, or the characterization of dynamic wetting angles during infiltration.

**Human-Caused Fires** - Refers to fires ignited accidentally (from campfires or smoking) and by arsonists; does not include fires ignited intentionally by fire management personnel to fulfill approved, documented management objectives (prescribed fires).

**Intensity** - The rate of heat energy released during combustion per unit length of fire edge.

**Inversion** - Atmospheric condition in which temperature increases with altitude.

**Ladder Fuels** - Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

**Landsat Imagery** - Land remote sensing, the collection of data which can be processed into imagery of surface features of the Earth from an unclassified satellite or satellites.

**Landscape** - All the natural features such as grasslands, hills, forest, and water, which distinguish one part of the earth's surface from another part; usually that portion of land which the eye can comprehend in a single view, including all its natural characteristics.

**Lethal** - Relating to or causing death; extremely harmful.

**Lethal Fires** - A descriptor of fire response and effect in forested ecosystems of high-severity or severe fire that burns through the overstory and understory. These fires typically consume large woody surface fuels and may consume the entire duff layer, essentially destroying the stand.

**Litter** - The top layer of the forest floor composed of loose debris, including dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

**Maximum Manageable Area** - The boundary beyond which fire spread is completely unacceptable.

**Metavolcanic** - Volcanic rock that has undergone changes due to pressure and temperature.

**Minimum Impact Suppression Strategy (MIST)** - “Light on the Land.” Use of minimum amount of forces necessary to effectively achieve the fire management protection objectives consistent with land and resource management objectives. It implies a greater sensitivity to the impacts of suppression tactics and their long-term effects when determining how to implement an appropriate suppression response.

**Mitigation** - Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impact of a management practice.

**Monitoring Team** - Two or more individuals sent to a fire to observe, measure, and report its behavior, its effect on resources, and its adherence to or deviation from its prescription.

**National Environmental Policy Act (NEPA)** - This act declared a national policy to encourage productive and enjoyable harmony between humans and their environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and will stimulate the health and welfare of humankind; to enrich the understanding of important ecological systems and natural resources; and to establish a Council on Environmental Quality.

**National Fire Management Analysis System (NFMAS)** - The fire management analysis process, which provides input to forest planning and forest and regional fire program development and budgeting.

**Native** - Indigenous; living naturally within a given area.

**Natural Ignition** - A wildland fire ignited by a natural event such as lightning or volcanoes.

**Noncommercial Thinning** - Thinning by fire or mechanical methods of precommercial or commercial size timber, without recovering value, to meet MFP standards relating to the protection/enhancement of adjacent forest or other resource values.

**Notice of Availability** - A notice of Availability published in the Federal Register stating that an EIS has been prepared and is available for review and comment (for draft) and identifying where copies are available.

**Notice of Intent** - A notice of Intent published in the Federal Register stating that an EIS will be prepared and considered. This notice will describe the proposed action and possible alternatives, the proposed scoping process, and the name and address of whom to contact concerning questions about the proposed action and EIS.

**Noxious Weeds** - Rapidly spreading plants that have been designated “noxious” by law which can cause a variety of major ecological impacts to both agricultural and wild lands.

**Planned Ignition** - A wildland fire ignited by management actions to meet specific objectives.

**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.

**Prescription** - A set of measurable criteria that guides the selection of appropriate management strategies and actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.



**Programmatic Biological Assessment** - Assesses the effects of the fire management programs on Federally listed species, not the individual projects that are implemented under these programs. A determination of effect on listed species is made for the programs, which is a valid assessment of the potential effects of the projects completed under these programs, if the projects are consistent with the design criteria and monitoring and reporting requirement contained in the project description and summaries.

**Reburn** - Subsequent burning of an area in which fire has previously burned but has left flareable light that ignites when burning conditions are more favorable.

**Riparian Habitat Conservation Areas (RHCA)** - Portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris, and nutrient delivery systems.

**Riparian Management Objectives (RMO)** - Quantifiable measures of stream and streamside conditions that define good fish habitat and serve as indicators against which attainment or progress toward attainment of goals will be measured.

**Road Density** - The volume of roads in a given area (mile/square mile).

**Scoping** - Identifying at an early stage the significant environmental issues deserving of study and de-emphasizing insignificant issues, narrowing the scope of the environmental analysis accordingly.

**Seral** - Refers to the stages that plant communities go through during succession. Developmental stages have characteristic structure and plant species composition.

**Serotinous** - Storage of coniferous seeds in closed cones in the canopy of the tree. Serotinous cones of lodgepole pine do not open until subjected to temperatures of 113 to 122 degrees Fahrenheit causing the melting of the resin bond that seals the cone scales.

**Stand Replacing Fire** - A fire that kills most or all of a stand.

**Sub-basin** - A drainage area of approximately 800,000 to 1,000,000 acres, equivalent to a 4th - field Hydrologic Unit Code.

**Surface Fire** - Fire which moves through duff, litter, woody dead and down, and standing shrubs, as opposed to a crown fire.

**Watershed** - The region draining into a river, river system, or body of water.

**Wetline** - Denotes a condition where the fireline has been established by wetting down the vegetation.

**Wildland Fire** - Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

**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 Situation Analysis (WFSA)** - A decision making process that evaluates alternative management strategies against selected safety, environmental, social, economic, political, and resource management objectives.

**Wildland Fire Use** - The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMP's. 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 for Resource Benefit (WFURB)** - A wildland fire ignited by a natural process (lightning), under specific conditions, relating to an acceptable range of fire behavior and managed to achieve specific resource objectives.

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