

Chapter 1

Purpose and Need

Background

The 2000 fire season was undoubtedly one of the most challenging on record. By early October, more than 6.8 million acres of public and private lands burned—more than twice the 10-year national average. The magnitude of these fires is the result of two primary factors: a severe drought, accompanied by a series of storms that produced thousands of lightning strikes followed by windy conditions. In addition, the long-term effects of almost a century of aggressively suppressing all wildfires has led to an unnatural buildup of brush and small trees in many forests and rangelands. It is also noted that since 2000, four fire seasons since have exceeded the magnitude of the 2000 season.

In 2000, in response to a request by President Clinton, the Secretaries of Agriculture and the Interior developed an interagency approach to respond to severe wildland fires, reduce their impacts on rural communities, and assure sufficient firefighting capacity in the future. This report* outlined a strategy to reduce wildland fire threats and restore forest ecosystem health in the interior West. The strategy builds on the premise that within fire-adapted ecosystems, reducing fuel levels and using fire at appropriate intensities, frequencies, and time of year are key to: restoring healthy, resilient conditions; sustaining natural resources; and protecting people. On September 9, 2000, President Clinton accepted the recommendations contained in the Report and directed the two Secretaries to implement those actions. The National Fire Plan for the USDA Forest Service (NFP)[†] represents our response to the President's charge and subsequent funding requests to Congress.

NATIONAL FIRE PLAN

The National Fire Plan addresses five key points: Firefighting; Rehabilitation and Restoration; Hazardous Fuel Reduction; Community Assistance; and, Accountability. The fuel management and reduction focus is critical to the Plan. It addresses overly dense forest vegetation that is the result of decades of fire exclusion from those lands. Fuel management activities will incorporate all types of treatments necessary to change stand

* *Managing the Impacts of Wildfires on Communities and the Environment: A Report to the President In Response to the Wildfires of 2000* (available on <http://www.na.fs.fed.us/nfp/overview/overview.htm>).

[†] see the National Fire Plan internet site for more information: <http://www.na.fs.fed.us/nfp/>

condition classes (which reflect the level of damage that would result from a wildfire on those lands) from higher risk condition classes to lower risk condition classes, and to maintain those areas in which a desirable condition class has been established. In addition, activities will focus on Wildland-Urban Interface[‡] (WUI) areas to reduce risk to people and property. The Cohesive Strategy[§] stated, “The first priority for restoration will be the millions of acres already roaded and managed landscapes that are in close proximity to communities.” The Cohesive Strategy went on to set four priorities: Wildland-urban interface, readily accessible municipal watersheds, threatened and endangered species habitat, and maintenance of existing low risk Condition Class 1 areas. The Bryan Flats Fuels Reduction project is proposed in response to the fuels reduction element of the National Fire Plan and the Cohesive Strategy.

Existing Condition

EXISTING VEGETATIVE CONDITIONS

Existing vegetative conditions found within the project area vary between several proposed treatment areas, near subdivisions and private lands adjacent to the Bridger-Teton National Forest. The following table briefly illustrates these differences:

Treatment Area *	Existing Vegetation (Approximate Acres)
North Willow Creek Mechanical	Aspen (22), Lodgepole Pine (23), Sagebrush (13)
Ann Mountain Mechanical	Lodgepole Pine (66), Aspen (5), Sagebrush (2)
Willow Creek Prescribed Burn	Aspen (261), Mixed Conifer (1018), Sagebrush (865), Sage/Bitterbrush Mix (106), Mountain Shrub (12), Grass/Forb (20), Willow (24)
Beaver Mountain Prescribed Burn	Aspen (80), Mixed Conifer (905), Sagebrush (270), Sage/Bitterbrush Mix (21), Mountain Shrub (27), Grass/Forb (6)

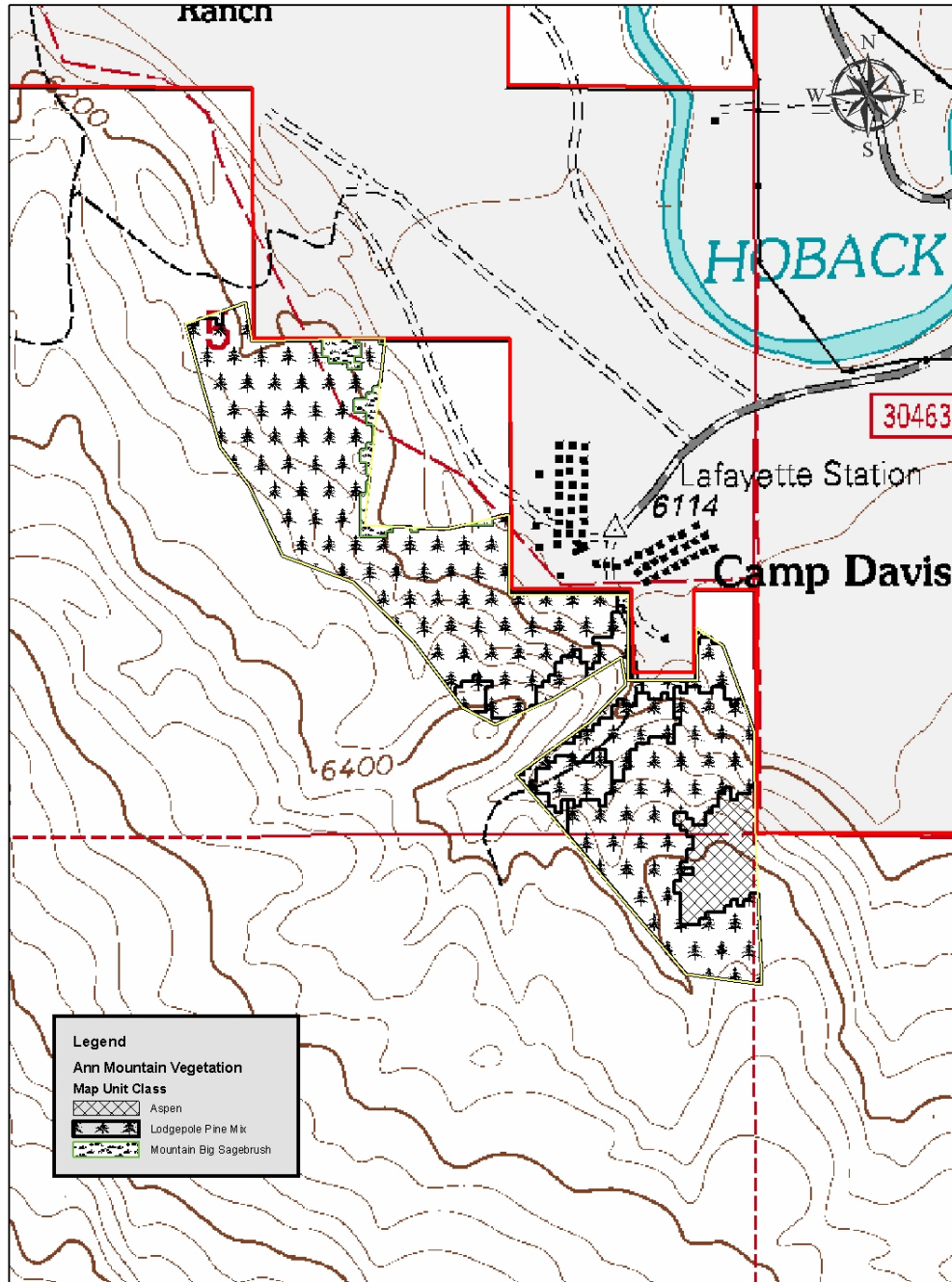
The following Figures show vegetation coverage maps illustrating the above described conditions. This information is based on the 2007 Bridger-Teton National Forest Vegetation Map. Due to display issues, symbology in these maps has been adjusted for better view under black and white printing, reference the above cited vegetation map for full detail.

[‡] WUI includes those areas of resident human populations at imminent risk from wildfire, and human developments having special significance. These areas may include critical communications sites, municipal watersheds, high voltage transmission lines, observatories, church camps, scout camps, research facilities, and other structures that if destroyed by fire would result in hardship to communities. These areas encompass not only the sites themselves, but also the continuous slopes and fuels that lead directly to the sites, regardless of the distance involved.

[§] Protecting People and Sustaining Resources in Fire-Adapted Ecosystems: A Cohesive Strategy, October 2000 (Laverly et al., 2000) (available on <http://www.fireplan.gov/cohesive.cfm>)

Figure 1.1 Ann Mountain Mechanical Treatment Vegetation Map

Ann Mountain Mechanical Unit Vegetation

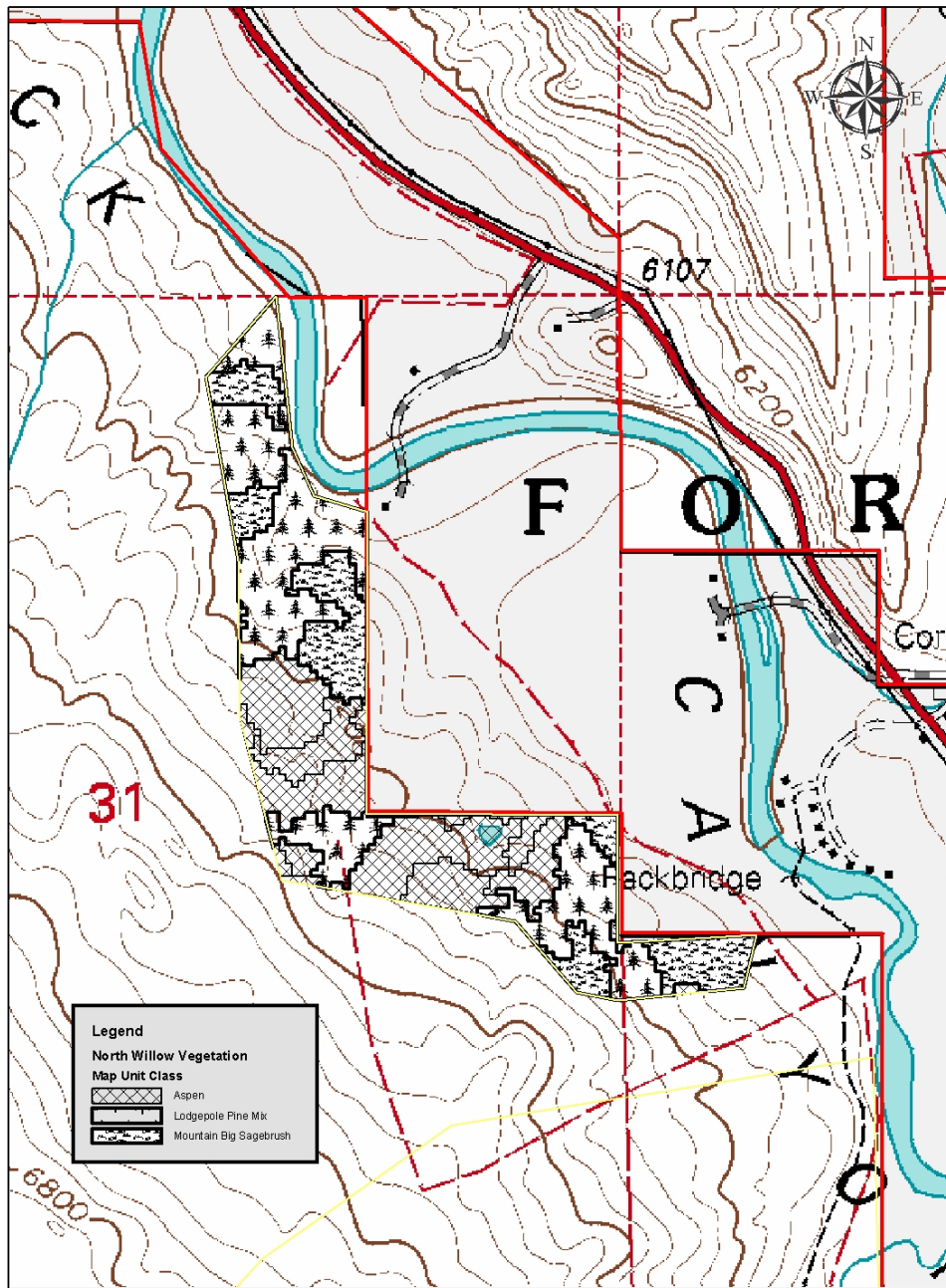


Created by Chris Vero
on March 1st, 2008

0 0.125 0.25 0.5 Miles

Figure 1.2 North Willow Mechanical Treatment Vegetation Map

North Willow Mechanical Unit Vegetation

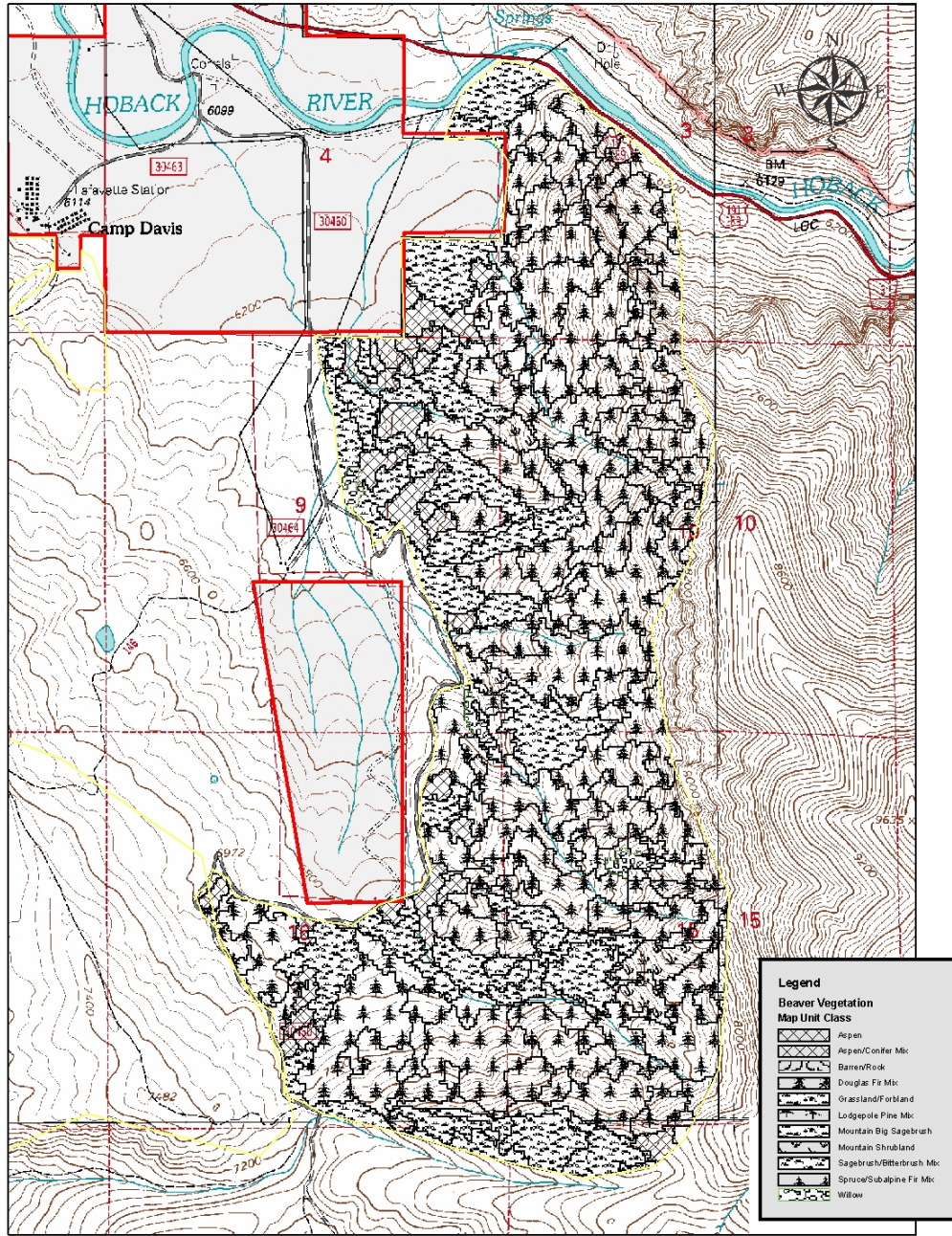


Created by Chris Vero
on March 1st, 2008

0 0.05 0.1 0.2 0.3
Miles

Figure 1.3 Beaver Mountain Prescribed Burn Vegetation Map

Beaver Mountain RX Burn Unit Vegetation

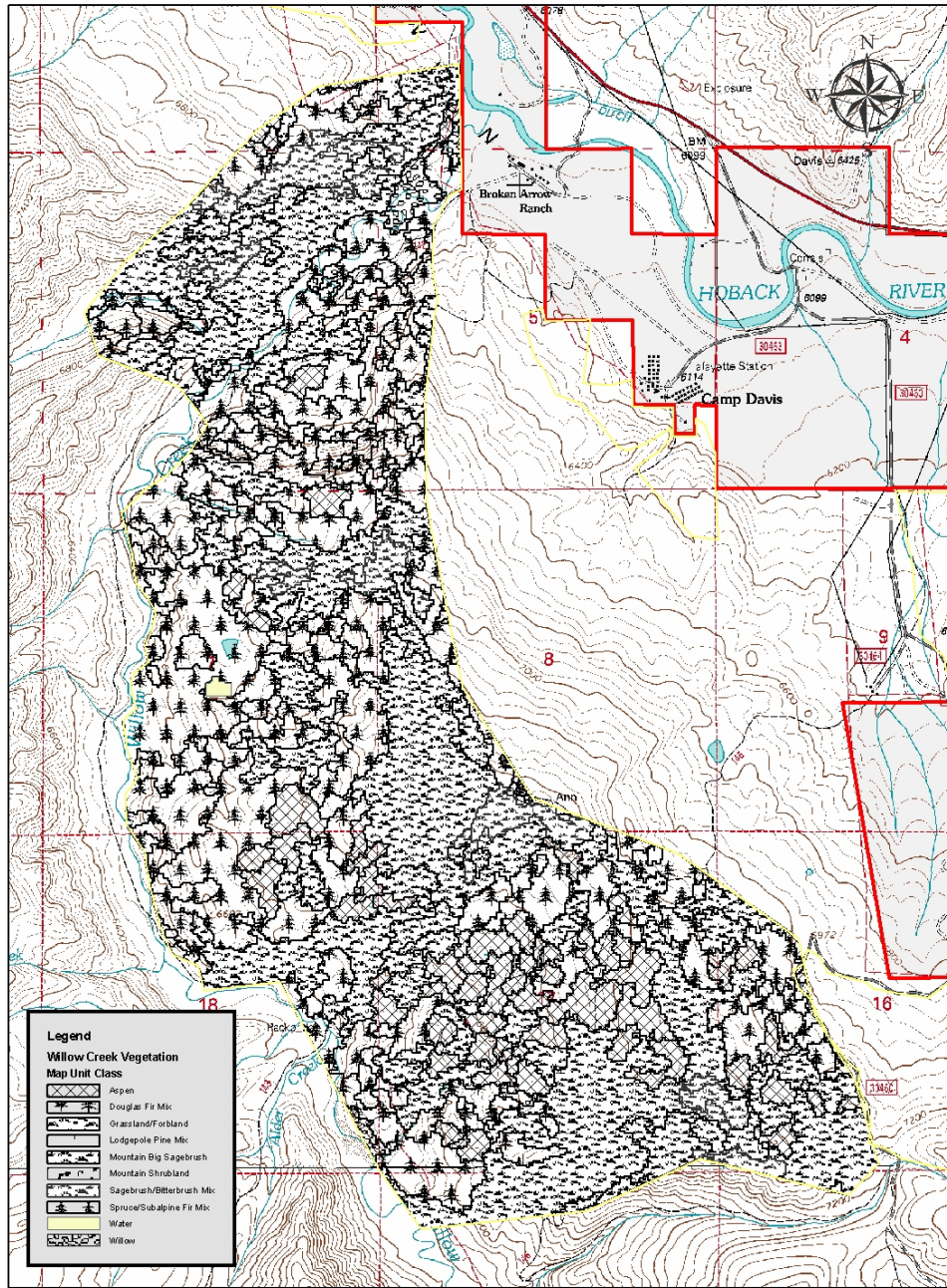


Created by Chris Vero
on March 1st, 2008

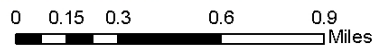
0 0.125 0.25 0.5 0.75
Miles

Figure 1.4 Willow Creek Prescribed Burn Vegetation Map

Willow Creek RX Burn Unit Vegetation



Created by Chris Vero
on March 1st, 2008



EXISTING CONDITION (continued)

The proposed treatment areas have private structures located nearby on private ground or on Forest Service permitted areas. Identified areas have fuel characteristics, which contribute to high flammability and resistance to control by fire crews. Conditions include but are not limited to high volumes of dead and down woody material, closely spaced trees with interlocking crowns, numerous small trees in the understory, and conifer encroachment in aspen stands.

Wildfires in these wildland urban interface areas are very difficult and costly to manage, as seen in the summer of 2001 Green Knoll fire. The 2003 East Table Fire in the Snake River Canyon presented complexity issues related to high recreational use and high use State Highway travel. Structures in the urban interface represent a large capital investment, and the owners expect that they will be protected. Protecting these areas is complex and costly. Most important, fires in the wildland urban interface pose a significant safety risk to federal, state and local firefighters assigned to suppress them.

Purpose of Action

The Bryan Flats Fuels Reduction project is proposed at this time to respond to goals and objectives of the National Fire Plan and the Bridger-Teton National Forest Land and Resource Management Plan (Forest Plan) (USDA Forest Service 1991). The goal of the proposed action is to increase the amount of defensible space on USFS lands which are adjacent to private lands. Comparison of the existing condition of the project area and the desired conditions from the Forest Plan indicates a need for:

- reduced forest fuels loading;
- reduced ladder fuels;
- reduced risk potential fire intensities;
- reduced risk to life, property, and natural resources;
- increased safety to fire suppression crews;

Desired Condition

The Bridger-Teton National Forest Land and Resource Management Plan sets a fire protection standard that Provide an appropriate fire protection and use program that is economically efficient, responsive to land management objectives and provides for public safety and property values. (Forest Plan amendment of 2004) This fire protection and use program is developed through The forest Fire Management Plan (FMP) which will provide operational direction for implementation of the Forest's land management plan. The interdisciplinary developed FMP will be developed and implemented in coordination with local, state, and other federal agencies.

Through the proposed action the desired condition would exhibit the following:

- Thinning of forested fuels and the understory, and removal of dead and down fuels will reduce the potential intensity of wildfires.
- Rejuvenating aspen stands (lessening conifer encroachment) will also reduce the potential intensity of wildfires, providing a safer environment for firefighters to efficiently undertake suppression actions.
- Under all but the most severe weather conditions, fire spread will be limited to lower intensity ground fire that can be suppressed more effectively by ground based firefighting resources.
- Torching of trees, and the potential for a fire to develop into a crown fire will be reduced.
- Costs of fire suppression will be reduced significantly, and there will be an increased chance for controlling the fire before it reaches private structures.
- Fuels treatments in the project area will also help managers and line officers in developing the Appropriate Management Response (AMR) to fires occurring within or encroaching on the project area.

Details of the comparison between existing and desired conditions for the analysis area are located in the project record and Chapter 3 of this Environmental Analysis.

Proposed Action

The Bridger-Teton National Forest is proposing vegetative treatments on approximately 3763 acres of National Forest System Land in response the purpose and need for action. Actions included in this proposal are:

- 132 acres of thinning to lessen ladder fuel concentrations and raise canopy base heights. Refer to the alternatives section for a description treatments.
- 132 acres of dead and down fuel loading reduction to 5 to 7 tons per acre.
- 132 acres of Pile burning to remove residual slash.
- Broadcast burning on approximately 3631 acres to achieve fuels management objectives.

Table 1.1 Treatment Unit Physical Descriptions and Proposed Implementation Methods

Treatment Area	Location	Acres (approximate)	Developed areas nearby
North Willow Creek Mechanical Treatment	T39N R115W secs 31,32	59	Spotted Horse Ranch, Bryan Flats residential area, Broken Arrow Ranch
Willow Creek Prescribed Burn	T39N R115W secs 31 and 32 T38NR115W secs 5,6, 7, 8, 9, 17,and 18	2308	Spotted Horse Ranch, Bryan Flats residential area, Broken Arrow Ranch, University of Michigan summer campus
Ann Mountain Mechanical Treatment	T38N R115W secs 5, 8, 9 and 16	73	Bryan Flats residential area, Broken Arrow Ranch, University of Michigan summer campus
Beaver Mountain Prescribed Burn	T38N R115W secs 3, 4, 9, 10, 15, 16, 21 and 22	1323	Bryan Flats residential area

Chapters 2 and 3 have a complete description of the Proposed Action, specific mitigation measures, monitoring requirements, etc.

The “proposed action” resulted from a thorough analysis of the desired and existing conditions of the area before the NEPA process began. Many possible actions resulted from this analysis, however, only two were chosen to be brought forward in this Environmental Analysis(EA). The proposed action presented to the public has been well studied. This gave the public and other agencies specific information on which to focus comments. Using these comments (see discussion of Significant Issues later in this chapter), and information from preliminary analysis, the interdisciplinary team then developed alternatives to the proposed action. These are discussed in detail in Chapter 2.

Decision Framework

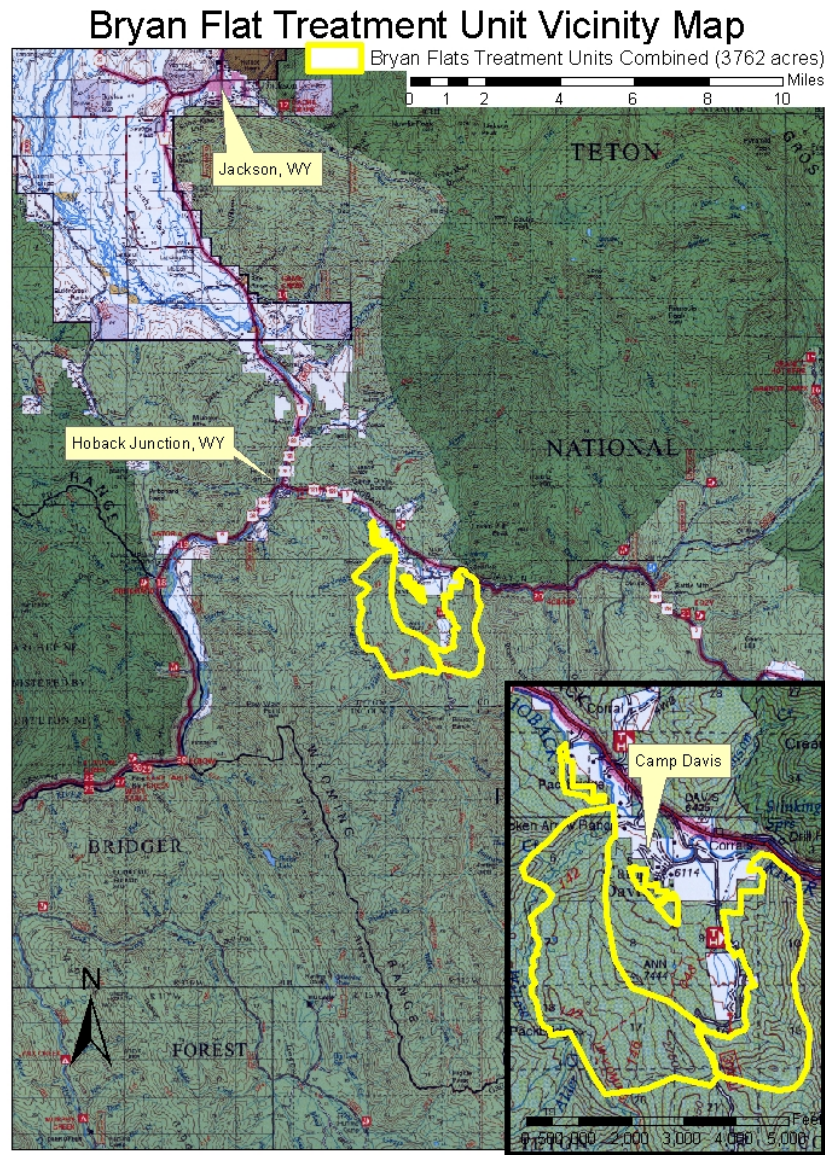
Based on the environmental analysis in this EA, the Jackson District Ranger will decide whether and how to reduce fuel loading in the Bryan Flats project area in accordance with Forest Plan goals, objectives and desired future conditions. The District Ranger will decide whether to implement an action alternative, a modified action alternative, or the no action alternative. If an action alternative is selected, it will include:

- The location, design, and scheduling of the proposed thinning, burning, and other activities or connected actions;
- Mitigation measures and monitoring requirements.

Project Area

Proposed treatments are located on Bridger-Teton National Forest lands adjacent to Private lands near the Bryan Flats area of Wyoming.

Figure 1.5 – Project area map for Bryan Flats Fuels Reduction Project.



Created by Alex Enna
on February 4th, 2008

Relationship to Forest Plan

The Forest Service has two types of decisions: programmatic (e.g., the Forest Plan) and project level which implements the Forest Plan. The Bryan Flats EA is a project-level analysis; its scope is confined to addressing the significant issues and possible environmental consequences of the project. It does not attempt to address decisions made at a programmatic level.

The Forest Plan embodies the provisions of the National Forest Management Act of 1976, its implementing regulations, and other guiding documents. The Forest Plan sets forth in detail the direction for managing the land and resources of the Bridger-Teton National Forest. Where appropriate, the Bryan Flats EA also tiers to the Forest Plan Final Environmental Impact Statement (USDA Forest Service 1991), as encouraged by 40 CFR 1502.20.

Forest Plan Management Areas

The Forest Plan uses management areas to guide management of the national forest lands within the Bridger-Teton National Forest. Each management area provides for a unique combination of activities, practices and uses. The Bryan Flats project area lies within one management area. Goals, objectives and desired conditions are summarized below. The Forest Plan (Chapter 4) contains a detailed description of each management area.

Description of Forest Plan Management area:

- 49 (Willow Creek): Located on the Jackson Ranger District of the Bridger-Teton National Forest, south of the Gros Ventre Wilderness and adjacent to the Cliff Creek and Snake River areas.

Table 1.2 Acreage within the project area of management area 49.

Treatment area	Management Area – 49 (acres)
North Willow Creek Mechanical	59
Ann Mountain Mechanical	73
Willow Creek Prescribed Burn	2308
Beaver Mountain Prescribed Burn	1323

Desired Future Conditions for Treatments within Management Area 49 or Willow Creek

Desired Future Condition 9A:

Portions of the Beaver Mountain treatment area lie within Desired Future Condition (DFC) area 9A. The management emphasis for DFC 9A is on existing and proposed developed recreation sites and Forest Service administration sites: campgrounds, picnic grounds, trailheads, visitor information centers, water-related recreation facilities and concentrated use areas in Roaded Natural areas. Present within this project are the Bryan Flats Guard Station and Bryan Flats Trailhead areas.

General prescriptions for DFC 9A related to Recreation, Visual Quality, Wildlife, Vegetation, and Fire Management are as follows. Recreation management emphasizes developed recreation, focusing on campgrounds, picnic areas, and Forest Service administrative sites. Visual Quality Objectives are for Retention and Partial Retention. Wildlife habitat management is not intended to meet State wildlife population, recreation-day or harvest objectives. Grazing is allowed seasonally for vegetative management purposes. Timber is managed to meet specific recreation objectives. Limited opportunities exist to provide wood fiber for firewood and other uses. Fire management emphasizes protection of developed facilities and related site values.

Desired Future Condition 12:

Portions of the Beaver Mountain and Willow Creek Prescribed Burns as well as the Ann Mountain and North Willow Mechanical treatment areas lie within DFC area 12. The management emphasis for DFC 12 is to provide important habitat for big-game such as winter ranges, feedgrounds, calving areas, and security areas. Management provides for habitat capability and escape cover, and maintained Semi-primitive Non-motorized opportunities that emphasize big-game hunting activities.

General prescriptions for DFC 12 related to Recreation, Visual Quality, Wildlife, Vegetation, and Fire Management are as follows. Recreation and other human activities are managed to meet needs of the big-game species. Visual Quality Objectives are Retention and Partial Retention. Habitat is managed to achieve the game and fish populations, harvest levels, success, and recreation-day objectives identified by the Wyoming Game and Fish Department (WYGF) and agreed to by the Forest Service. Specific guidelines for wildlife habitat can also be referenced in the Bridger –Teton National Forest Land and Resource Management Plan. Vegetation is managed to enhance range and watershed condition while providing forage for livestock and big game. Timber is managed to preserve and enhance critical big-game habitat. Utilization of firewood and other wood products is encouraged in ways compatible with maintaining wildlife values. Fire management emphasizes preservation and enhancement of habitat, particularly through prescribed fire.

Desired Future Condition 10:

Portions of the Willow Creek Prescribed Burn treatment area lie within DFC area 10. The management emphasis for DFC 10 is to provide long-term and short-term habitat to

meet the needs for wildlife managed in balance with timber harvest, grazing, and minerals development. All surface-disturbing activities are designed to have no affect or beneficial effects on wildlife.

General prescriptions for DFC 10 related to Recreation, Visual Quality, Wildlife, Vegetation, and Fire Management are as follows. Existing roaded recreation opportunities continue where they do not interfere with the objectives for this area. Areas of both Semi-primitive Motorized and Semi-primitive Non-motorized are provided. Visual Quality Objectives are Retention, Partial Retention, and Modification. Wildlife prescriptions emphasize groups of species in order to increase species richness or diversity. Habitat is managed to achieve the game and fish populations, harvest levels, success, and recreation-day objectives identified by the Wyoming Game and Fish Department (WYGF) and agreed to by the Forest Service. Specific guidelines for wildlife habitat should can also be referenced in the Bridger –Teton National Forest Land and Resource Management Plan. Vegetation is managed to enhance range and watershed condition while providing forage for livestock and big game. Timber is managed to achieve desired wildlife habitat conditions while developing long-term, overall big-game hiding cover values. Utilization of firewood and other wood products is encouraged in ways compatible with maintaining wildlife values. Fire management emphasizes preservation and enhancement of habitat.

General Fire Protection and Fuels Standards Common to all DFC's:

Fire and Fuels standards and guidelines call for an appropriate fire protection and use program that is economically efficient, responsive to land management objectives and provides for public safety and property values. Maintenance of fuels in Wildland Urban Interface areas so that fires occurring in these areas remain at lower intensities under all but the most severe burning conditions helps to meet these standards and guidelines. The proposed fuels treatments for the Bryan Flats project would help to meet standards and guidelines detailed in the Forest Plan and Bridger-Teton National Forest Fire Management Plan.

A map depicting DFC's for the Bryan Flat project can be found within Chapter 2.

Best Available Science

Projects implementing land management plans and plan amendments...must be developed considering the best available science. Projects proposed and carried out must be consistent with the forest plan and show consideration of "best available science."

Sources for obtaining the best available science for this project include the following:

1. 2007 Bridger –Teton National Forest Vegetation Map.
2. 2007 Bridger – Teton National Forest Fire Management Plan.
3. Northern Rockies Lynx Management Direction Record of Decision. USDA Forest Service. March 2007.
4. 2001 USDA – FS and USDOJ Report – Urban Wildland Interface Communities within the Vicinity of Federal Lands that are at Risk From Wildfire.

5. High resolution Topographic maps and resource data available through Geographical Information Systems (GIS).
6. Standard Fire Behavior Fuel Models: A Comprehensive Set For Use With Rothermels Surface Fire Spread Model. Scott and Bungan. June 2005. RMRS-GTR-153.
7. LANDFIRE (Landscape Fire and Resource Management Planning Tools Project) www.landfire.gov. GIS data.
8. Cost estimates – professional judgement estimate based on previously implemented projects and the cost thereof, projected based on estimated complexity to implement the project.
9. NF landscape Management Handbook, Volume 2, #642, page 301.
10. Historical fire records for the Bridger – Teton National Forest. Example. Data found through KCFAST. <http://famweb.nwcg.gov>
11. Professional opinion (through Jackson Ranger District and Forest Supervisors Office staffs) of Fuels and fire behavior, vegetation management, soils, wildlife, recreation issues, cultural resources, and visual quality are a crucial part of the analysis.

The project record also contains specific information related to specific specialists reports, cited within these reports.

Public Involvement

Scoping

The Council on Environmental Quality (CEQ) defines scoping as “...an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action” (40 CFR 1501.7). Among other things, the scoping process is used to invite public participation, to help identify public issues, and to obtain public comment at various stages of the environmental analysis process. Although scoping is to begin early, it is really an iterative process that continues until a decision is made. In addition to the following specific activities, the Bryan Flats project has been listed on the Bridger-Teton National Forest Schedule of Proposed Actions since (September 2006). To date, the public has been invited to participate in the project in the following ways.

Public Mailing

This project was listed in the September 2006 Forest Quarterly report. On March 21, 2007, a letter updating the project and requesting comments was sent to approximately 120 individuals, groups or agencies that either expressed interest in the Bryan Flats Fuel Reduction Project, are adjacent landowners, or were deemed likely to hold an interest in the project. 2 comments were received from the March 21, 2007 letter, and were generally supportive of the project. Concerns were expressed regarding potential impacts from project implementation related to: visual impacts, smoke from prescribed burning,

impacts to recreation, roadless areas, wildlife habitat and threats to values related to prescribed burning. The concerns have been addressed through modification of project design, where appropriate.

A Forest Interdisciplinary Team (IDT) consisting of a hydrologist, fisheries biologist, soil scientist, wildlife biologist, Silviculturist, fuels specialist, recreation specialist, heritage resource specialist, and team leader reviewed the comments and conducted a review of the proposed project. This Interdisciplinary Team also took a field trip to the project area on May 3, 2007. The Interdisciplinary Team has concluded that the project would not have significant effects on the quality of the human environment. Issues developed by the IDT included effects to: visual impacts, smoke from prescribed burning, impacts to recreation, soils stability issues and prescribed burning, and threats to values related to prescribed burning

The Bryan Flats area is identified in the 2001 USDA –FS and USDOJ report – Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire.

This project has been developed through collaboration with the adjacent landowners, Teton County Wyoming, Teton Conservation District, and Forest Service Personnel.

Local News Media

Announcements about the project were printed in the Jackson Hole Daily Guide, and a press release was issued during the initial scoping phase (March 23, 2007).

Public Meetings

A public meeting was held on March 27, 2007 at the Hoback Junction Fire Station to give interested parties a chance to discuss the project with the Forest Service. Seven parties attended the meeting. No written comments were received as a result.

Meetings with Agencies, Communities, Native Groups and Others

The fire and fuels management staff has met with and discussed options for fuels work in the proposed project area with officials from the Teton County Fire Department and US Fish and Wildlife Service. Correspondence has been undertaken with the State of Wyoming Office of Federal Land Policy, including the State Historic Preservation Office and Wyoming Game and Fish Department. A wide spectrum of Non-Governmental Organizational groups were sent the scoping package which was also sent to private landowners adjacent to the project area.

30-Day Comment Period on EA

The 36 CFR 215 appeal regulations require a 30-day notice and comment period for Environment Assessments before a decision can be made. Responses to comments will be in an Appendix to the EA.

Issues

Scoping (internally and through direct mailings to the public) and public involvement activities are used to identify unresolved issues about the effects of the proposed action. The following issues were determined to be within the scope of the project decision as prescribed in 40 CFR 1502.2. Issues are addressed through the proposed action, alternatives to the proposed action, mitigation measures, and design criteria. Issues are discussed below.

1. **Extent of treatment:**

Public comment was in favor of thinning of the stands within the project area. For mechanical treatment interest in large scale heavier treatments (timber harvest) has been voiced both negatively and in favor of such. Issues related to the roadless designation of much of the project area as well as terrain and access issues have precluded implementing a large scale mechanical treatment involving timber harvest and road construction.

2. **Soil Stability:**

Soil Stability issues have been identified by IDT members as well as the public in some portions of the project area.

3. **Roadless Areas:**

93 % of the project area lies within the Grayback ridge IRA designated roadless area.

4. **Visuals:**

Concerns exist for impacts on the visual quality of the project area. Visual Quality Objectives for this area is Retention. This visual quality objective provides for management activities which are not visually evident. Under Retention activities may only repeat form, line color, and texture which is frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc., should not be evident. (NF Landscape Management Handbook, Volume 2, #642, Page 30). Treatments would be adjacent to private lands as well as along many forest trails, and some treatments would be visible from Highway 189/191. This concern relates directly to the level of treatment proposed in this fuels reduction project.

5. **Trails and recreation use:**

As stated in number 4 above many of the treatment areas are located within trails corridor areas. Issues relate to impacts to existing trails and also status of trail access during project implementation. Impacts to use of the area by hunters and outfitters during hunting season has been identified as an issue.

6. **Wildlife effects:**

Potential effects to Threatened and Endangered Species have been identified as issues and will be addressed in design criteria and mitigations in the Biological Assessment and Evaluation.

7. **Threats to Values:**

Some publics have voiced concerns over the risk of Prescribed Burning as related to private lands, structures adjacent to burn units and public health and safety as related to smoke propagation.

8. Conservation Easements:

A comment was received from the Jackson Hole Land Trust regarding donated conservation easements on private lands in the Bryan Flats area. The Land Trust asks that the Forest Service recognize these easements and the issues which may arise if the Forest wishes to access the project area through the lands in conservation easements.

Other Issues

The following issue or resource concern is important and was considered in the determination of issue significance. It was, however, determined to be a request for information or other process concerns, was already resolved through existing law, regulation, or policy, or is beyond the scope of this analysis. Some are already addressed through other processes such as the Forest Plan (see “Items Common to All Alternatives” in Chapter 2.) The complete analysis of issue identification and resolution is located in the project record.

1. Increased OHV (Off Highway Vehicles) access and use in the project area was cited as a potential negative impact from project implementation. Increased OHV access and use could potentially increase the spread of noxious weeds. OHV use is regulated by travel management policy of the Jackson Ranger District and Bridger – Teton National Forest. This project will not provide greater legal access opportunities through implementation. No new roads or trails will be created, nor will any currently closed roads be opened or improved, thus, access for OHV’s will not increase as a result of increased access resulting from project implementation. This issue is a Bridger – Teton National Forest wide issue and beyond the scope of analysis of this project. The issue is addressed through development of Forest Plan standards and guidelines and regulated through enforcement of laws and regulations. The issue was described in the Visual Quality specialists report (referenced in Chapter 3) and also described the potential increased spread of noxious weeds as a result of potential increased OHV access.

Federal and State Permits, Licenses, and Certifications

To proceed with the proposed project as addressed in this EA, various permits must be obtained from federal and state agencies. The following permits will be obtained.

State of Wyoming Air Quality Permits will be obtained before any prescribed burning takes place in the project area.

Applicable Laws and Executive Orders

Shown below is a partial list of federal laws and executive orders pertaining to project-specific planning and environmental analysis on federal lands. While most pertain to all federal lands, some of the laws are specific to Wyoming. Disclosures and findings required by these laws and orders are contained in Chapter 3 and the Decision Notice for this EA.

Multiple-Use Sustained-Yield Act of 1960

National Historic Preservation Act of 1966 (as amended)

Wild and Scenic Rivers Act of 1968, amended 1986

National Environmental Policy Act (NEPA) of 1969 (as amended)

Clean Air Act of 1970 (as amended)

Endangered Species Act (ESA) of 1973 (as amended)

Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 (as amended)

National Forest Management Act (NFMA) of 1976 (as amended)

Clean Water Act of 1977 (as amended)

American Indian Religious Freedom Act of 1978

Archeological Resource Protection Act of 1980

Cave Resource Protection Act of 1988

Executive Order 11593 (cultural resources)

Executive Order 11988 (floodplains)

Executive Order 11990 (wetlands)

Executive Order 12898 (environmental justice)

Executive Order 12962 (aquatic systems and recreational fisheries)

Executive Order 13186 (Migratory Bird Treaty Act)

Project Record Availability

Additional documentation, including more detailed analyses of project-area resources, may be found in the project record located at the Jackson Ranger District in Jackson, Wyoming. Some of these documents are referenced throughout the EA by author or record number in brackets. These records are available for public review pursuant to the Freedom of Information Act (5 U.S.C 552).

Chapter 2

Alternatives

Introduction

This chapter describes and compares the alternatives considered by the Forest Service for the Bryan Flats project. It includes a discussion of how alternatives were developed, an overview of mitigation measures, monitoring and other features common to all alternatives, a description and map including specific mitigation measures of each alternative considered in detail, and a comparison of these alternatives focusing on the significant issues. Chapter 2 is intended to present the alternatives in comparative form, sharply defining the issues and providing a clear basis for choice among options by the responsible official and the public (40 CFR 1502.14).

Some of the information used to compare alternatives at the end of Chapter 2 is summarized from Chapter 3, “Environmental Consequences.” Chapter 3 contains the detailed scientific basis for establishing baselines and measuring the potential environmental consequences of each of the alternatives. For a full understanding of the effects of the alternatives, readers will need to consult Chapter 3.

Alternative Development Process

The Forest Service interdisciplinary team (IDT) used information from scoping, including the significant issues identified for the project (see Chapter 1), in conjunction with the field-related resource information, to formulate alternatives to the proposed action. The proposed action and each action alternative presented in this EA provide a different response to the significant issues; one alternative may respond to more than one issue. Each action alternative is also designed to meet the stated purpose and need for the Bryan Flats Fuels Reduction project, and the project-specific desired conditions.

Each action alternative represents a site-specific proposal developed through intensive interdisciplinary evaluation of current and desired conditions, based on field verification. Project area identification and design also made use of high resolution topographic maps and a large quantity of resource data available in geographic information system (GIS) format.

Forest Plan Consistency

All alternatives including the proposed action are consistent with the 1991 Bridger-Teton National Forest Land and Resource Management Plan as amended. All applicable forest-wide and management area standards and guidelines have been incorporated into all alternative design. The Forest Service uses many mitigation and preventive measures in the planning and implementation of land management activities. The application of these measures begins during the planning and design phases of a project. Additional direction comes from the Regional Guide, and applicable Forest Service manuals and handbooks.

Project-specific Mitigation

The analysis documented in this EA discloses the possible adverse and beneficial impacts that may occur from implementing the actions proposed under each alternative.

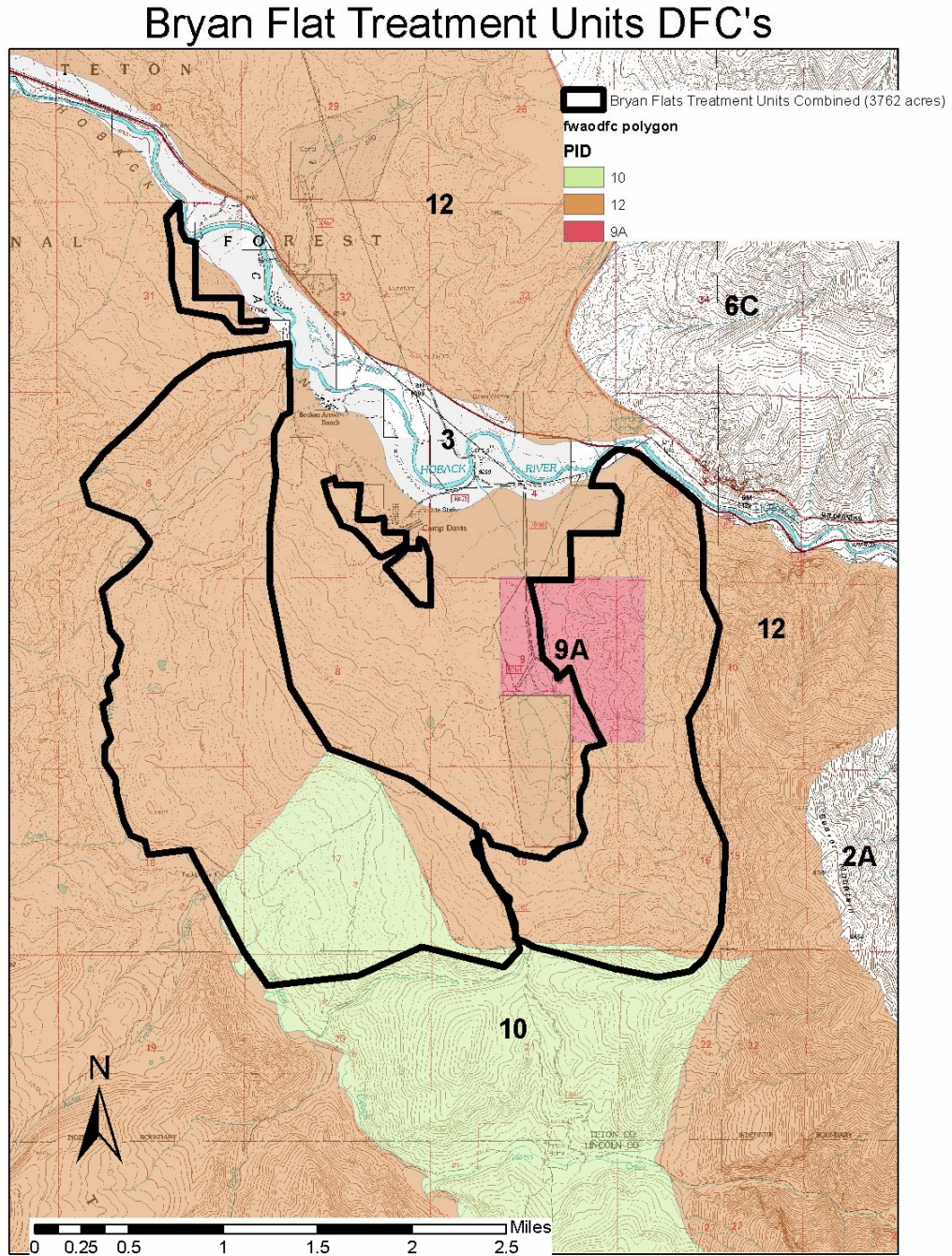
Measures have been formulated to mitigate or reduce adverse impacts. These measures were guided by the direction from the Bridger-Teton Land and Resource Management Plan previously described (in this chapter and in Chapter 1).

IDT specialists use on-the-ground inventories, computer (GIS) data, and various studies to prepare their reports. Resource reports show the cause and effect relationships between the alternatives and their specific effects, and indicate mitigations to reduce or eliminate those adverse effects in the design of the alternatives. These reports are summarized and referenced in this EA in Chapter 3 and may be found in the project record. Resource concerns and mitigation measures may be refined further if unanticipated concerns are identified during the comment period.

Applicable Forest Plan standards and guidelines, the “Best Management Practices” (BMP’s) used to meet the requirements of the Clean Water Act, and project-specific mitigation measures are identified in these reports. Forest Plan standards and guidelines specific to the Project are:

- No activities will occur that would jeopardize the eligibility of Designated Roadless areas for future Congressional designation as Wilderness
- Other standards and guidelines relate to Roadless Designated areas. Reference specific standards and guidelines applicable to DFC’s (Desired Future Conditions) as stated in the 1991 Land and Resource Management Plan for the Bridger Teton National Forest. DFC’s in the project area hold specific concerns for: Developed recreation and Forest Service administrative sites, and providing for wildlife habitat needs year round. Each DFC also has specific standards set for fire protection and fuels management. Previously, in Chapter 1 an overview of DFC’s associated with treatment areas was outlined.

Figure 2.1 on the following page depicts DFC locations in the project area.



Created by Alex Enna
on February 4th, 2008

Monitoring

Monitoring activities can be divided into Forest Plan monitoring and project-specific monitoring. The National Forest Management Act requires that National Forests monitor and evaluate their forest plans (36 CFR 219.11). Chapter 5 of the Forest Plan includes the monitoring and evaluation activities to be conducted as part of Forest Plan implementation. There are three categories of Forest Plan monitoring: Implementation monitoring, effectiveness monitoring, and validation monitoring.

Effectiveness and validation monitoring are not typically done as part of project implementation. Implementation monitoring, and any additional project-specific monitoring, are however important aspects of the project.

Routine Implementation Monitoring

Routine implementation monitoring assesses whether the project was implemented as designed and whether it complies with the Forest Plan. Planning for routine implementation monitoring began with the preliminary design of the Bryan Flats Fuels Reduction project.

Primary Monitoring objectives set forth for this project will be to assess success of implementation. Desired results would indicate a successful reduction in fuel loadings and flammability of the treatment areas, as well as favorable public opinion of implementation procedures. Monitoring techniques will include recording photographs of treatment areas before and after treatments, simple fuel measurement transects before and after treatments, and polling of publics in the area to quantify public opinion throughout the planning and implementation phases of this project. The Fire and Fuels staff on the Jackson Ranger District will be responsible for fuels and vegetation related monitoring implementation and the Recreation staff on the Jackson Ranger District will assist in the public opinion polling. Monitoring results will be stored in the project record for the Bryan Flats Fuels Reduction project.

Other monitoring objectives would be to:

- Monitor treated sites in designated increments (as identified in the silvicultural prescription) to assess maintenance of the site to retain the stand characteristics achieved through treatments.
- Monitor treatment areas for noxious weed invasion. This should be done every 1 to 2 years, and as long as these sites would provide ground conditions for noxious weed establishment.
- Monitor any wildfire ignitions within treatment areas and wildfires burning into treatment areas to determine if treatments met objectives set forth in the purpose and need of the project.

Findings and Disclosures

Several of the laws and executive orders listed in Chapter 1 require project-specific findings or other disclosures. These findings and disclosures will be in the Decision Notice which will record the decision and rationale for decision by the District Ranger.

Alternatives Considered

Several alternatives were considered during the planning process. Alternatives consist of a no action alternative and fuels treatments to achieve the desired condition. Along with a no action alternative and the proposed action an alternative involving a much larger mechanical treatment area and timber harvest was considered. This alternative was ruled out early in the planning process due to expected significant issues and negative impacts and is not considered in detail. Treatments are described below.

Alternatives Considered in Detail

The proposed action (Alternative 2) is considered in detail. Alternative 1 is the no-action alternative, under which the project area would receive no fuels reduction treatments at this time, and would remain subject to natural or ongoing changes only. Alternative 1 , the no-action alternative, represents the current condition of the project area and is used as a baseline when comparing the effects of the proposed action. Larger-scale maps of the proposed treatments are contained in the project planning record.

Alternative 1 – no action

The emphasis of this alternative is to propose no fuels reduction treatments in the Bryan Flats Fuels Reduction project area at this time. It does not preclude future actions. The Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14d) require that a “no action” alternative be analyzed. This alternative represents the existing and projected future condition against which the other alternatives are compared.

The No Action alternative would have no outputs and does not meet the purpose and need for the project. The No Action Alternative does not move the project area towards the desired condition. It does however, address issues of disturbance in the area and would have no impacts on the current landscape other than the existing undesirable wildland fuels conditions in this urban interface area which would remain and continue to worsen.

Alternative 2 – proposed action

The proposed action was designed to respond to the purpose and need described in Chapter 1, the National Fire Plan, and the regional priority of treating Wildland Urban Interface areas. The actions described in figure 2.3 will move the project area towards the desired condition by treating approximately 3763 acres. This alternative will focus on utilization of different types of fuels manipulation called mechanical treatment and broadcast burning. This also includes no treatments in identified areas that preserve Lynx habitat components. These fuels treatments would lessen the probability of a

catastrophic wildfire. Any mechanical fuels reduction in this alternative would require piling of slash and ultimately burning of piles. Mitigation measures for this alternative are defined later in this chapter.

Table 2.3 –LEVEL OF TREATMENT FOR AREAS IN THE BRYAN FLATS FUELS REDUCTION PROJECT.

Treatment Area	Lynx Mitigation Areas (acres)	Mechanical (acres)	Broadcast Burning (acres)
North Willow Cr. Mechanical	0	59	0
Ann Mountain Mechanical	0	73	0
Willow Creek Prescribed Burn	793 *	0	Up to 2310**
Beaver Mountain Prescribed Burn	468 *	0	Up to 1325**
* Lynx Mitigation Areas			
** Includes acres identified in Lynx Mitigation Areas.			

Lynx Mitigation Areas

Ignitions will not be part of project implementation within these identified areas. The use of management ignitions will only occur if deemed necessary to hold previously ignited areas within the identified project area. Proposed prescribe burn treatments in units outside the Wildland Urban Interface will not be implemented until field measurements of horizontal cover density for snowshoe hares in mature/late seral multi-storied forest stands in proposed units can be completed. Cover board transects will be assessed to identify those forest stands presently providing suitable hare habitat. Such stands will not be treated under any signed decisions made to implement the proposed project actions. Forest stands not providing suitable horizontal cover for hares could potentially be treated if feasible to burn and still maintain (protect) the existing condition of suitable hare horizontal cover. Prescribed burning of forest cover not suitable as hare habitat will not be implemented until a Supplemental Information Report to the Biological Assessment is completed on the field measurements of horizontal cover, and concurrence is received from the US Fish and Wildlife Service on a determination of effects on Canada lynx and their proposed critical habitat.

Mechanical Thinning

Moderate treatment of vegetation. Reference Appendix C for photopoints showing similar treatments prior to and after a similar mechanical thinning strategy was

undertaken adjacent to the Gros Ventre River Ranch on the Jackson Ranger District of the Bridger – Teton National Forest

- Reduce dead and down fuel loadings to 5 to 7 tons per acre, where the present volume exceeds this.
- Reduction of ladder fuels by thinning conifers <8” dbh in the understory, as well as limbing overstory trees to a height of 10’ above ground level. Removal of smaller diameter (<8” dbh) conifers from under the dripline of mature conifers.
- Treatments in some locations will also be designed to facilitate enhanced vigor of aspen stands, through 100 % removal of conifer <9” dbh within aspen stands and up to one and a half tree lengths outside existing aspen stands.
- Residual slash will be piled. Piles will be burned after curing for approximately one calendar year and when burning conditions allow.

Broadcast Burning

Through a combination of hand and aerial ignitions treat portions of the areas identified for prescribed burning. Objectives are to rejuvenate (set back succession) aspen and brush fuels, break up continuity of dense vegetation (brush and timber), maintain or enhance forest openings showing signs of conifer encroachment, and utilize fire as a method of fuels reduction. The quantified objectives include:

- 20 to 60% conifer mortality in treated mixed stands,
- retain 30 % mature aspen and convert 70% of treated aspen to earlier successional stages.
- Promote structural diversity in sagebrush stands.
- Attain following canopy closure (cc) in treated sagebrush areas: 20% @ 0-5% cc, 35% 6-25% cc, 45% > 26% cc.
- Treat areas showing signs of conifer encroachment into meadows or openings by achieving >40% conifer mortality in identified encroached areas.
- With broadcast burning will come the need for preparation of certain areas to ensure prescribed fire stays within designated unit boundaries. When feasible the treatment will occur along existing trails or in areas of thinner vegetation. It will include thinning brush along identified trails/areas as well as thinning conifer fuels, mirroring the moderate level of treatment (mechanical). A small tractor type vehicle may be utilized to accomplish this burn preparation where terrain and access allows.

Comparison of Alternatives

This section compares outputs, objectives and effects of the alternatives in terms of the significant issues for the Hoback Junction to Bryan Flat Fuels Reduction project. The discussions of effects are summarized from Chapter 3, which should be consulted for a full understanding of these and other environmental consequences. The tables below provides an overview comparison of information from the alternative descriptions and Chapter 3 relevant to the issues. This information will be used in the discussions which follow.

Table 2.4 Comparison of alternatives

	ALT. 1 NO ACTION	ALT. 2 PROPOSED ACTION		
No Treatment (acres)	3763	0		
Mechanical treatment (acres)	0	132		
Lynx Habitat – no treatment (acres)		1261*		
Pile burning (acres)	0	Up to 132		
Chipping or other (acres)	0	0		
Broadcast Burning (acres)	0	Up to 3631		
Miles of Fireline needed for Prescribed Burning				
* refer to figure 2.3 for details.				

Table 2.5 – Comparison of Alternative Effects

	ALT. 1 NO ACTION	ALT. 2 PROPOSED ACTION
Extent of Treatment	Temporal successional changes	Mechanical – more open understory, increased aspen Broadcast Burning – less homogeneity, younger age classes, increased aspen presence on landscape
Soil Stability	Current condition	Slight effect
Roadless Areas	No change	Project implementation will not effect future status
Visuals	No effect, could deteriorate over time	Enhanced, with implementation of project specific mitigations
Trails and recreation use	No effect, future wildfires could have negative impacts	Short term visitor use impacts, potential impacts to trails and trail use.
Wildlife Effects*	Variable	Variable
Threats to Values	Continued threat from wildfire	Recognized risks from prescribed burning, mitigated through implementation plans
Conservation Easements	No effect, wildfire occurrence could create unwanted types of access	As proposed the project will have no effect to the state of easements.

*reference Chapter 3.

Features Common to All Alternatives

Project specific mitigations related to the identified issues and other identified environmental factors are briefly described below. Refer to Chapter 3 for more detailed information.

Extent of Treatment

- Thin from below strategy, no road construction and no timber harvest.

Soil Stability

- Recommendations on season of prescribed burning and allowable acreage burned during each phase of implementation.
- Avoidance of identified sensitive areas.

Designated Roadless Area

- No roads or skid trails will be constructed.
- Stump height restrictions in mechanical units within Roadless Area <4”.

Visual Quality

- <4 “ stump heights where visible from homes or trails
- All slash will be piled and burned
- Landscape Architect to assist with unit layout.
- Specific to mechanical treatments: Unit boundaries to be feathered. With prescribed burning, efforts will be taken to not create unit boundary lines on the landscape, natural barriers and areas of vegetation change will be used as holding points for management ignitions where feasible.

Trails and Recreational Use

- Early public notification of project implementation through all available media.
- Minimize area and trail closures as much as possible.
- Signage of trailheads and access points to notify public of mechanical treatment operations along trails.
- Chainsaws must be shut down within 200 feet of horses in trail areas.
- Implement mechanical projects along one trail at a time to minimize impacts to trail use.

Wildlife

- Follow Goshawk guidelines as identified.
- Follow specifications of Special Food Storage Order (004-000-025) during project implementation.
- If any Threatened or Endangered Species (TES) nest, den or important site is found in the project area, activities may need to be curtailed or certain restrictions imposed.
- Seasonal restrictions on activities related to certain wildlife species.
- Retain at least 30% of mature shrub/grass, aspen and conifer/shrub in winter range areas.
- Implement prescribed fire in a mosaic fashion.
- Stand Replacement patches resulting from prescribed fire should not exceed 10 acres.
- Maintain 4 down logs/acre at least 12” diameter and 20 feet long.

- Retain 4 to 6 snags per acre where present.
- Retain 5 to 7 tons per acre of down woody debris where present.
- No treatment within 800 meters of Bald Eagle nest from 2/15 to 8/15.
- Identify and map wetlands, ponds, streams. No ignitions within identified riparian areas.

Smoke Management

- Prescribed burning plans will address and mitigate for impacts from smoke.
- Prescribed burning will adhere to Wyoming State guidelines related to smoke emissions and prescribed burns will receive a burn permit from the State.

Sensitive Plants

- Surveys will be conducted for rare and sensitive plant species prior to project implementation.

Cultural Resources

- Cultural resources clearance has been obtained from the State Historic Preservation Office (SHPO).
- If any cultural resource sites are discovered during implementation, appropriate action will be taken in consultation with SHPO.

Threats to Values

- Implementation plans will address the inherent risks associated with prescribed burning, mitigation actions will be developed through prescription development and other identified actions.

Conservation Easements

- There should be no negative impacts to conservation easements through project implementation.
- If access is needed through any easements, the District will consult with the landowner and/or the Jackson Hole Land Trust.

Fisheries

- No issues have been identified related to the viability of fisheries within the project area as a result of the project.

Chapter 3

Environmental Effects

Introduction

This chapter provides information concerning the affected environment of the Bryan Flats Fuels Reduction project area, and potential consequences to that environment. It also presents the scientific and analytical basis for the comparison of alternatives presented in Chapter 2. All effects, including direct, indirect and cumulative effects, are disclosed. Effects are quantified where possible, and qualitative discussions are also included. The means by which potential adverse effects will be reduced or mitigated are described.

The discussions of resources and potential effects take advantage of existing information included in the Bridger-Teton National Forest Plan's FEIS, other project EA's OR EIS's, project-specific resource (specialist) reports and related information, and other sources as indicated. Where applicable, such information is briefly summarized and referenced to minimize duplication. The planning record for the Bryan Flats Fuels Reduction project includes all project-specific information, including specialist reports, and other results of field investigations. The record also contains information resulting from public involvement efforts. The planning record is located at the Jackson Ranger District Office in Jackson, Wyoming, and is available for review during regular business hours. Information from the record is available pursuant to the Freedom of Information Act.

Environmental Effects of the Issues

Fuels and Fire Hazard

Current and Desired Fuels and Flammability Properties of the Treatment Areas:

Fire Behavior Implications

Mechanical Treatments:

- Mechanical treatments as described will reduce ladder and surface fuels to an extent which will lower potential flame length and intensity given a fire spread into or start within the treatment area. This will lessen potential for crown fire adjacent to private lands in the project area.

- By lessening fuels along the private boundary, the effectiveness of suppression forces will be greatly enhanced. Lower potential flame lengths, reduced rates of spread, and reduced potential fire intensities provide for a more effective and safer suppression response.
- With mechanical treatments will follow the need for slash treatment. Slash will be piled and burned after curing for approximately 1 year. Slash is typically burned in the fall of the year after enough moisture has fallen in the area to ensure little to no fire spread from piles. Smoke emissions associated with pile burning are of a concern, and a smoke management plan will address minimizing impacts to the surrounding area by managing timing of ignitions and amount of ignitions on any given day. Impacts from smoke relate to impacts to residents, visual quality and impacts to highway safety in the Bryan Flats area. Key points to address when managing smoke impacts related to pile burning are related to actual volume and direction of drift, and timing ignitions so pile combustion is complete by days end to avoid a smoke inversion occurring in the area.

Broadcast Burning Treatments:

- Broadcast burning will reduce fuel continuities throughout treated areas. By increasing the diversity of age classes and vegetation types on the landscape the effect to fire behavior will be to lessen the probability of high intensity fire behavior as would be expected in a more homogenous vegetation scenario.
- By treating fuels at the landscape level with broadcast prescribed fire, as described above to achieve a vegetation mosaic, the ignition of a fire within the project area, or a large fire moving into the project area we should encounter lessened fire behavior in treated areas as a fire moves through varying types of fuels. The effect on rate of spread may be lessened or there may be no change depending on conditions. The effect on fire intensities should see a noticeable decrease based on the reduction of available fuels to support a high intensity fire where treatments occur. This type of landscape scenario will give managers more options in developing an Appropriate Management Response (AMR) to any wildfire starting or moving into treated areas.
- Smoke emissions will be a concern with any broadcast burning activities in the project area. A smoke management plan will address minimizing impacts to the surrounding area by managing timing of ignitions and amount of ignitions on any given day. Impacts from smoke relate to impacts to residents, visual quality and impacts to highway safety in the Hoback Junction and Bryan Flat areas. Key points to address when managing smoke impacts related to broadcast burning are related to actual volume and direction of drift, and timing ignitions so combustion is complete by days end to avoid a smoke inversion occurring in the area.

Table 2.1

- Reference STANDARD FIRE BEHAVIOR FUEL MODELS: A COMPREHENSIVE SET FOR USE WITH ROTHERMEL’S SURFACE FIRE SPREAD MODEL. Scott and Burgan. June 2005. RMRS-GTR-153. for a more detailed description of these fuels models.

Fuel model Descriptions	
TL1	Low load, compact conifer litter
TL3	Moderate load conifer litter
TL4	Small downed logs
TU1	Light load, dry climate timber grass-shrub
TU5	Very high load, dry climate timber-shrub
GS2	Moderate load, dry climate grass-shrub
GR1	Short, sparse, dry climate grass

- Mechanical treatments will strive to convert areas exhibiting TU5 conditions to TU1, TL1 or TL3 conditions. Mechanical treatments will also be designed to maintain TU1, TL1 or TL3 conditions where they already exist.
- Prescribed fire treatments will strive to convert areas exhibiting GS2 or TU5 conditions to GR1, TU1, TL1, or TL3 conditions (or maintain GR1, TU1, TL1, or TL3 if they already exist). It should be noted that the application of fire on a landscape level will not be exact. The intention of the treatment is to provide a mosaic and/or break up the continuity of areas exhibiting GS2 or TU5 properties, not to consume all acreage with these fuels properties.

Table 2.2 – Existing fuels and flammability properties (Fuel model) of treatment areas.¹

Treatment Area	Existing Fuel Model Properties	Proposed Treatment	Desired Fuel Model Properties
North Willow Cr. Mechanical	TU1 intermixed with TU5	Mechanical	Maintain TU1 and reduce TU5
Ann Mountain Mechanical	TU1 intermixed with TU5	Mechanical	Maintain TU1 and reduce TU5
Willow Creek Prescribed Burn	TU1 w/ TU5, GS1 with GS2	Broadcast Burn	Reduce TU5 and GS2, maintain TU1 and GS1
Beaver Mountain Prescribed Burn	TU5/ TL4 with TU1 interspersed Grass/Shrub	Broadcast Burn	Reduce continuity of TU5 and TL4

¹ acquired from LANDFIRE (Landscape Fire and Resource Management Planning Tools Project, (www.landfire.gov) GIS data.

Alternative 1 (no action): Under the no action alternative, fuels and flammability properties of the project area would change under natural processes. Areas already exhibiting high flammability properties would continue to accumulate higher volumes of dead and down fuels and ladder fuels would continue to increase. Areas in Fuel Model conditions currently exhibiting lesser fire behavior properties would slowly change to exhibiting properties closer to Fuel Model TU5 or GS2. Areas of aspen with conifer encroachment would also increase in flammability properties due to continued conifer encroachment. In general, overall fuels characteristics of the project area would over time, likely develop into timber stands or brush areas having higher potential for problem fire behavior with increased difficulty to suppress. Problem fire behavior includes: higher probability for tree torching and crown fire development, increase in spot fires from lofted embers produced from torching trees, higher flame lengths, higher fireline intensities, and ultimately greater threats to private property and structures adjacent to the project area.

Alternative 2 (proposed action): Under the proposed action, fuels and flammability properties of the project area would change under management of the existing conditions, through:

- thinning of ladder fuels, dead and down fuels, conifers encroaching on aspen stands,
- reducing the homogeneity of timber and brush stands,
- and in some cases reductions in canopy closure.

Areas exhibiting high flammability properties would show lower volumes of dead and down fuels and ladder fuels would be thinned to raise the base height of tree canopies and available canopy fuel. Areas already in a state which would exhibit lesser fire behavior properties would continue to exhibit these properties. Areas of aspen with conifer encroachment would be treated to retain the lower flammability properties of aspen stands. In general, overall fuels characteristics of the project area would exhibit properties allowing for increased chances of suppressing fires before they develop problem fire behavior characteristics.

The complete specialists report on Fire and Fuels Hazard can be found in the project record.

	ALT. 1 NO ACTION	ALT. 2 PROPOSED ACTION		
Canopy Base Height (feet) ¹	0-30	>10		
Crown Fire Hazard	Low to high	Low to moderate		
Available Canopy Fuel	Low to high	Low to moderate		
Dead/Down fuel loading ¹ (tons/acre)	5 to >30	<= 7		
Smoke particulates from prescribed burning	None	Mod		
Sediment	No effect	No effect to slight increase		
Wildlife Habitat	Variable	Variable		
Economics				
Total project cost (\$) ²	0	~\$284000		
Chance of Severe Wildfire	Increase over time	Chance of severe wildfire decreases. Specific treatments will require varying levels of maintenance over time.		

¹ These values would hold true specifically for mechanical treatments. For broadcast burning the effect may be variable including meeting this result to no change. In general Broadcast burning will be prescribed to meet or exceed project objectives.

² Cost based on \$500/ac for mechanical and \$60/ac for Broadcast Burning.

DISCUSSION OF ALTERNATIVES EFFECTS:

Crown Base Height: Defined as the vertical distance from the ground to the bottom of the live crown of an individual tree. This definition also incorporates the presence of understory trees and other ladder fuels in the stand. The current conditions show areas with high crown base heights and areas of thick spruce/fir type forest with very low crown base heights, as well as some areas with crown base heights which do not pose a significant threat. The intent of the proposed action is to increase crown base heights in areas where ladder fuels and stand structure put the existing crown base height near ground level. Increasing crown base height will lessen the probability of crown fire occurring in the project area.

Crown Fire Hazard: Defined as a physical situation (fuels, weather and topography) with potential for causing harm or damage as a result of crown fire. The proposed action will reduce the crown fire hazard by reducing fuel loadings and crown base heights in the project area. Fires starting in the project area will exhibit low to moderate crown fire hazard after treatments, depending on level of treatment. Crown fires initiated in adjacent areas (USFS or private) and moving into treated areas may continue to burn as crown fires in the treated areas if burning conditions allow, but, treatments would lessen the potential for these fires to continue as crown fires.

Available Canopy fuel: Defined as the mass of canopy fuel that could be consumed in a crown fire. This includes foliage and the very small branch wood present in the stand canopy structure. The proposed action would reduce the available canopy fuels present in the project area. Doing so would decrease the crown fire hazard in the Bryan Flat Fuels Reduction project area.

Dead Down Fuel Loadings: Defined as the weight per unit area (tons/acre) of dead and down woody fuels. Of greatest concern are dead and down woody fuels greater than 1” in diameter. There is variation throughout the project area in the level of dead and down woody fuels present. The goal of the proposed action is to reduce the levels of dead and down woody fuels to no greater than 7 tons per acre across the entire project area. This amount of dead and down fuels will significantly reduce the intensity of any wildfires within the treatment areas under all but the most severe burning conditions.

Wildlife: Effects on wildlife habitat in the project will be variable and species specific. Wildlife design criteria have been developed and are fully documented in the project record.

Chance of Severe Wildfire: Through manipulation of the vegetation in the project area the chances of severe wildfire impacts in the treatment area will be decreased. The goal of the proposed action is to increase the amount of defensible space on USFS lands which are adjacent to private lands. These fuels reduction measures are designed to promote wildland firefighter and public safety, as well as increasing the defensibility of private lands and structures in the wildland urban interface area. As part of a silvicultural prescription for this project, a maintenance schedule will be determined to identify time frames for reentry into treatment areas to keep fuel volumes at a level to maintain the desired condition of lower fuel volumes and less probability of severe wildfire occurring in these areas.

Total Project Cost: True cost of implementing any of the alternatives has yet to be determined. An estimate has been given based on cost comparison of projects of this nature that have occurred on the Bridger-Teton National Forest. In all likelihood implementation would take place over several years, spreading the cost over time. Different methods of implementation could change the estimated costs given in table 3.1 considerably.

Extent of treatment

Alternative 1 (no action): Under the no action alternative, no treatment would occur in the project area. The state of the forest in the proposed project area would be affected by only natural processes, including fire occurrence from natural or other ignition sources. Effects of suppressing fires in the area or from fires themselves would probably exhibit more change to the natural stands than if they were treated to maintain fuels characteristics conducive to lower fire intensities.

Alternative 2 (proposed action): All treatment areas are in identified Wildland Urban Interface as depicted in the Bridger-Teton Fire Management Plan and Teton County Community Wildfire Protection Plan, or are adjacent to these areas. Proposed mechanical treatments will be similar treatments undertaken in other fuels reduction projects on the Jackson Ranger District, which were designed with a thin from below concept in mind. Broadcast burning is also proposed, and feelings from the public were mixed toward broadcast burns. Concerns were raised for the aesthetic effects after burning and also risk involved with broadcast burning. Visual effects and risk factors are addressed later in this chapter. Concerns for soil stability have been identified as well related to broadcast burning.

Soil Stability:

Alternative 1 (no action): Soil stability issues in the area would not be affected by this project. Soils issues including landslides and slumps would occur as they have in the past.

Alternative 2 (proposed action): One Area of sensitive soils has been identified in the Bryan Flat project area, and an exclusion area for no treatment has been proposed by the soils specialist. To minimize soils impact it is recommended that most burning occur in the spring season and that acreage burned not exceed 400 acres at each entry. Project design and burn implementation will strive to incorporate these criteria, but, to achieve the purpose and need of the project, acreages may exceed 400 acres at each entry, and , burning will be considered during all seasons. Sensitive soil areas will be avoided.

Designated Roadless Areas:

Alternative 1 (no action): Under the no action alternative, no treatments would occur in designated Roadless Areas. No fuels treatments within roadless areas and adjacent to private land and structures may not facilitate the ability to manage future wildfire ignitions in these areas utilizing light hand tactics and minimizing negative resource impacts from fire suppression. Ignitions in the area during times of extreme burning conditions which could potentially threaten private land and structures would need to be controlled with whatever means necessary which may include the need to use mechanized equipment such as bulldozers.

Alternative 2 (proposed action): 93% of the project area lies within Designated Roadless Areas. Project implementation cannot jeopardize these areas for future designation as wilderness. Fuel treatment primarily **affects the untrammeled quality** of wilderness character since it would be a direct human manipulation of forest vegetation. The undeveloped/unoccupied quality of wilderness character would be somewhat affected by the physical presence of tree stumps, however the small diameter of trees to be removed and the ability to flush cut stumps would alleviate this impact. The natural quality of wilderness character would be somewhat affected since it would change the structure of the forest but would not affect the existing native species composition of the forest. Fuel treatments would not fundamentally change the opportunity for people to experience remoteness, natural quiet, solitude, freedom, risk, and the physical and mental challenges of self-discovery and self-reliance.

Treatment levels within roadless areas will be designed so as not to jeopardize this area for future consideration as wilderness. No roads will be constructed, and at this time throughout the project area no road construction is proposed. The proposed fuels treatments within the roadless areas and adjacent to private land and structures will facilitate the ability to manage future wildfire ignitions in these areas utilizing light hand tactics and minimizing negative resource impacts from fire suppression. The treatments may also facilitate future abilities to manage naturally ignited fires in the area for resource benefits.

Table 3.1 depicts a worksheet used to describe effects to the Roadless Characteristics of the Area

Effect to Roadless Characteristics			
Roadless Characteristics	Is there an effect? Yes or No	Which direction is the effect? Improving, Stable or Degrading?	Describe the actual effect. Use descriptive terms that discuss the effect, not the activity.
Soil, water and Air resources Identify any unique or critical watershed resources. Describe how the project will affect these key resources areas and the habitats that depend on them.	Yes	Improving as well as Stable	Prescribed burning will create smoke and will have a short term effect to air resources, however long term the effects will be minimized with lighting techniques as well as with time of season burning. Impacts to soil due to mechanical fuels reduction activities (thinning) may occur but not exceed forest plan standards and mitigations will be employed to ensure that soil impacts are minimized.
Sources of public drinking water Identify any public drinking water systems or sources within the project area or that would be affected by the project. Describe how the project would affect water quality and quantity of the public drinking water source.	Yes	Stable	Vegetation that is treated will not likely affect the municipal drinking water within the area. No road construction and a thin from below strategy in mechanical units will minimize effects to water quality. Known water sources include a spring development within the project area which provides water to Camp Davis.
Diversity of plant and animal communities Discuss the diversity of plant and animal communities. Identify any unique plant and animal communities within the area. Describe effects to the diversity of communities and impacts to populations in the areas.	Yes	Improving	Fire exclusion has led to a decline in aspen within the project area. This project is intended to help regenerate aspen stands that are more resistant to canopy fire conditions. A Biological Assessment and a biological evaluation were prepared for this project that discusses the animal habitat communities that are present. These documents along with specialist reports for exotic plant communities are located within the project record.
Habitat for TES and species dependent on large undisturbed areas of land	Yes	Stable	TES species do exist within the Bryan Flats Area. A Biological Assessment and a Biological Evaluation were prepared for

<p>Identify any TES or sensitive species within the Roadless area. Describe how the project would affect the habitats or populations and whether this effect is significant across the normal range and distribution of these habitats and populations.</p>			<p>this project and mitigations are documented in the project folder.</p>
<p>Primitive and semi-primitive classes of recreation Describe current recreation opportunities within the Roadless area. Identify the effects of your project of the area and these activities. Describe the effect in terms of availability for similar experiences in surrounding areas or within the region of use. Consider link to ROS mapping.</p>	<p>Yes</p>	<p>Stable/ Improving</p>	<p>The Bryan Flats trailhead is a gateway to the Willow Creek area for hikers and horseback riders. There will be prescribed burning activities adjacent to this area prescribed burning will not have long term adverse effect on the recreation activities along this trail. Other trails utilized by outfitters exit the area near the Broken Arrow Ranch and Camp Davis. Mechanical treatments near these areas can be categorized as light to moderate and no road construction is planned, so, effects to recreation will be minimal. This project will not have significant long term effects to the hiking, horse back riding and cross-country skiing.</p>
<p>Reference landscapes for research study or interpretation Describe the landscape that is present. Describe any unique reference landscapes that exist within the Roadless area. Describe how the project activities might affect the reference landscape values of the Roadless area. Consider how the landscapes within the Inventoried Roadless area fits within the broader landscape and if the project creates any overall change. Consider landscape character descriptions in SMS.</p>	<p>No</p>	<p>Stable</p>	<p>This project will not significantly alter the affected landscape. Refer to the Visual effect specialist report for more information.</p>
<p>Landscape character and integrity Describe the current scenic quality and character of the area. Describe project effects to the scenic integrity of the area and changes to the character of the area. Consider existing scenic integrity.</p>	<p>No</p>	<p>Improving</p>	<p>The Hoback River corridor and Bryan Flats area are some of the forests most popular destinations for viewing outstanding scenery. The aspen in the fall with bright yellow color mixed with the surrounding mountains and the river drainage has all of the elements of a class "A" landscape. It has a variety of vegetation, land forms of steep drainages and high elevation mountain peaks and water in the foreground. The riparian area has, willow, narrow leaf cottonwood, aspen and high</p>

			<p>grass meadows. This is excellent habitat for big game such as moose. The steep slopes on each side have heavily timbered north aspects and great open, south aspects of aspen, sage and mixed conifer. Generally the landscape is in a “naturally appearing” condition with a high degree of verity in aspen and mixed conifer in the middle and back ground views. The foreground is mostly high end, single family homes. The ranching character is dominant with fencing, barns, and livestock.</p> <p>The proposed action has the potential for major negative impacts on the visual resource. This is a foreground, middle ground and back ground Retention Standard road and corridor in the forest plan. This means that “management activities are not evident”. Retention must be met when the project is complete. There is no grace period for rehabilitation in this standard. Management activities must be sensitive to the visual appearance of any action. The entire project area will be seen from roads and dispersed camping area, with the exception of the Willow Creek Prescribed Burn Unit. The eyes and ears of the public will see the project before, during and after. Special care must be taken to minimize the effects of this project. The project also has the potential for positive, long term visual effects.</p> <p>The sustainability of positive scenic values is paramount. To add variety and promote age class diversity, are positive steps for this valued landscape and this project can move us in the right direction.</p> <p>Mitigations have been developed which will minimize effects to visual integrity and even improve it.</p>
<p>Traditional cultural properties and sacred sites Identify generically any significant cultural resources within the Roadless area and describe the effect of the project on these resources. Typically mitigation will be designed to prevent significant effects to these resources.</p>	No	Stable	<p>There are no culturally significant sites that will be affected by this project. Reference Cultural Resources report.</p>
<p>Other locally unique</p>	No	Stable	<p>There are no unique characteristics that this</p>

characteristics Identify any locally unique characteristics and describe how the project would affect these values.			project will affect
---	--	--	---------------------

Visual Quality:

Concerns for impacts on the visual quality of the project area were raised during the scoping process. These concerns were related to the view from afar and also to visual quality within localized areas. Treatments would be adjacent to private lands as well as many forest trail corridors. This concern relates directly to the level of treatment proposed in this fuels reduction project.

Existing Scenic Conditions (ESC)

The Hoback River corridor and Bryan Flats area are some of the forests most popular destinations for viewing outstanding scenery. The aspen in the fall with bright yellow color mixed with the surrounding mountains and the river drainage has all of the elements of a class “A” landscape. It has a variety of vegetation, land forms of steep drainages and high elevation mountain peaks and water in the foreground. The riparian area has, willow, narrow leaf cottonwood, aspen and high grass meadows. This is excellent habitat for big game such as moose. The steep slopes on each side have heavily timbered north aspects and great open, south aspects of aspen, sage and mixed conifer. Generally the landscape is in a “naturally appearing” condition with a high degree of verity in aspen and mixed conifer in the middle and back ground views. The foreground is mostly high end, single family homes. The ranching character is dominant with fencing, barns, and livestock

The casual observer may not be aware of the effects from years of fire suppression or the lack of fire as a natural process on this landscape. Evidence of this cumulative effect can be seen in decadent aspen stands that need fire to regenerate, the lack of age class diversity in mixed conifer north slopes and disease out breaks in conifer stands. In general, the landscape should look vibrant and have much more variety in color, vegetation patterns and different age classes than it now has. Management is needed to mimic the role of fire as a disturbance agent on this landscape.

Forest Plan Direction

Visual Quality Objectives for this area is Retention.

This visual quality objective provides for management activities which are not visually evident. Under Retention activities may only repeat form, line color, and texture which is frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, pattern, etc., should not be evident. (NF Landscape Management Handbook, Volume 2, #642, Page 30)

Effects of Proposed Action to the Visual Resource

The proposed action has the potential for major negative impacts on the visual resource. This is a foreground, middle ground and back ground Retention Standard road and corridor in the forest plan. This means that “**management activities are not evident**”. Retention must be met when the project is complete. There is no grace period for rehabilitation in this standard. Management activities must be sensitive to the visual appearance of any action. The entire project area will be seen from roads and dispersed camping area, with the exception of the Willow Creek Prescribed Burn Unit. The eyes and ears of the public will see the project before, during and after. Special care must be taken to minimize the effects of this project.

The project also has the potential for positive, long term visual effects.

The sustainability of positive scenic values is paramount. To add variety and promote age class diversity, are positive steps for this valued landscape and this project can move us in the right direction.

Mitigation

Visual Quality Objectives, as listed above, cutting units blend into the remaining scenery. In order to achieve the retention standards for this project:

- Units must appear to be “natural”, Clumpy, uneven age classes and random tree spacing
- strict adherence to very low (under 4 inches) stump height requirements when seen from roads and homes
- All slash would be piled and burned.
- Landings must be out of site from roads and homes (**Under the proposed action no landings will be utilized or constructed**).
- Skid trails must be revegetated and not seen from roads and homes (**Under the proposed action no skid trails will be utilized or constructed**).
- A landscape architect should assist with marking and layout of treatment units in order to facilitate reasonable aesthetic needs.
- “Leave strips” along roads and property boundaries are not visually truthful, nor healthy for the local forest environment.
- Special care must be taken to NOT leave or create unit boundary lines on the landscape. The use of natural vegetation boundaries is best. Where natural boundaries are not found, vary the unit boundaries.
- In dominant aspen stands, the removal of all conifer trees is desired to maintain aspen in the larger landscape. Under the proposed action a diameter limit will be placed on conifers to be removed to minimize slash propagation, this is recommended by the IDT leader in response to the inability of this project to remove merchantable timber due to access issues (Roadless area designation over 93% of the project area).
- In dominant conifer stands, Clumping and characteristic open spaces in mixed amounts yield a more natural-appearing and scenic landscape

- Feather or gradually increase cutting or decrease cutting in-between aspen and conifer stands to create a smooth transition and a more natural appearing landscape.
- **Noxious weeds:** From a recreation perspective, the threat again comes from the possibility of increased off-highway vehicle travel. An education campaign targeting OHV's, at least locally, could be of some help, encouraging riders to clean their vehicles before recreating on national forest lands. Perhaps partnerships could be utilized with area dealerships offering cleaning stations on their lots to be used by their clientele, as well as sharing informational brochures or posters regarding the importance of this issue. **Reference Chapter 1 – Other Issues for a discussion of this threat, which has been categorized as being beyond the scope of this analysis.**

Alternative 1 (no action): Under the no action alternative visual quality would be affected by processes outside of the scope of the proposed fuels reduction process.

Alternative 2 (proposed action):

Under the proposed action the above identified mitigations will be followed. The proposed action has been modified since its original conception to a lighter mechanical treatment with no timber harvest and no road construction, skid trails or need for landings. Mechanical cutting of trees will not include ALL conifers in aspen stands but will be limited to 8 dbh and less, since the removal of larger diameter trees will not be feasible.

Trails and Recreation use:

Current Recreation Use

Portions of the project area receive varying amounts of recreation use during the winter, summer, and fall seasons. Snowmobiling is popular within the project area during the winter season. The area also receives some snowshoeing and cross country skiing use, mostly from adjacent landowners. During the summer season horseback riding and hiking are popular with primary access from the Bryan Flats Trailhead and Spotted Horse Ranch. Mountain biking use is increasing with access to the area occurring primarily from the Bryan Flats trailhead. Fall is the heaviest recreational use season in the project area with hunting as the primary activity. Approximately 16 permitted outfitters are authorized to hunt within this project area. Among private hunters Willow Creek is known for its excellent hunting opportunities and most hunters pack in camps and camp for extended periods.

The **mechanical treatment areas** border private property. It is likely that landowners adjacent to the National Forest hike out their back yards onto National Forest but the

effects of the mechanical treatments to this recreation use are expected to be minimal and of short term duration. There may be some disruption of activities during actual cutting and burning operations. The Ann Mt. Mechanical Treatment Area lies adjacent to the Bryan Flat Trailhead. This trailhead receives a tremendous amount of permitted outfitter and private use during the summer and fall seasons. The primary activities in this project area are horseback riding and hiking. The North Willow Creek Mechanical Treatment Area lies adjacent to the Spotted Horse Ranch, a permitted outfitter. The primary use from the ranch is horseback riding and fishing. Effective mitigations will have to be implemented to ensure horseback rider safety while cutting operations are taking place.

Willow Creek Prescribed Burn Area – Four permitted outfitters are authorized to operate within this treatment area. Table 1 describes the level of permitted use. There are system and permitted outfitter non-system trails in this project area. A map depicting system and non-system trails is attached in **Appendix D**.

Table 1.

Outfitter	Permitted Service Days
Spotted Horse Ranch	1700 summer, 300 fall
Mill Iron Ranch	200
Jackson Country Outfitters	1500
Barlow Outfitting	200
Camp Creek Outfitters	200

The trails that pass through this project area are used to access lower Willow Creek by private landowners at the mouth of Willow Creek, and by users coming from the Bryan Flats Trailhead.

Beaver Mt. Prescribed Burn Area – The Rim Rock Ranch Road passes through this project area along the western boundary. This road is closed to public use but does receive some administrative access. A landslide has closed this road near the south western edge of this project area. There are non-system trails within this project area that parallel the road and cut across some of the switchbacks (see appendix D map). The trails through this project area are used to access upper Willow Creek using the Bryan Flats Trailhead as the primary access point.

Recommended Mitigations

Spring burning within the Prescribed Fire Treatment Areas will cause the least disruption to recreation activities. It is hoped that spring burning will be considered if it can be accomplished within prescription. Burning during the fall hunting season from September 1 through October 31 will cause the greatest impact to recreation. If burning during this period is the most viable option it is recommended that the following be implemented:

- Early public notification through all available media such as newspapers, radio, web, signs posted at local access points, personal calls to permitted outfitters

- Minimize area and trail closures to the least amount of time necessary to provide for public and firefighter safety
- Only close one project area at a time to allow displaced use to disperse
- Have a Special Order signed to make closures enforceable
- Staff the popular access points with Forest Protection Officers during the time of day most likely to target hunter access (pre-dawn, 0500-0900) to enforce closures

In the mechanical treatment areas safety of recreational users, particularly horseback riders, is a primary concern. The following mitigations are recommended for these treatment areas:

- Signs will be posted at trail entrances and intersections where work is occurring
- Trail closures will be minimized and covered with a special order
- If horseback riders approach sawyers, saws will be shut down when horses approach within 200 feet, and will not be started until the horses have moved 200 feet past
- Work will be confined to one trail at a time to allow recreational users to bypass work activities using alternate trails

Affected Trail	Miles of Trail Affected
Willow Creek Trail #146	1.9
Willow Creek to Pickle Pass #142	3.2
Alder Creek #143	0.4
Closed Road #046	2.7
Permitted Outfitter Trails (non-system)	7.8

Wildlife effects:

The proposed project occurs primarily in Management Prescription 12. Management emphasis is on providing such important habitat for big-game as winter ranges, calving areas, and security areas. Management provides for habitat capability and escape cover, and maintains semi-primitive non-motorized opportunities that emphasize big-game hunting activities. A small inclusion of Management Prescription 10 occurs within the Willow Creek and Beaver Mountain prescribe burn units. Management emphasis here is to provide long-term and short-term habitat to meet the needs of wildlife managed in balance with timber harvest, grazing, and minerals development. All surface-disturbing activities are designed to have no effect or beneficial effects on wildlife.

Mechanical treatments will remove small diameter conifer. In addition, decadent aspen clones scattered through the mechanical units would be treated to remove conifer encroachment and stimulate aspen regeneration.

Prescribe burn treatments will rejuvenate aspen stands, reduce sagebrush density, reduce dead and down material, thin understory conifer to reduce ladder fuel loadings. This will reduce the potential wildfire intensities within this area. A mosaic of interspersed burn and unburned areas is the desired condition to maintain at least a third of the shrub/grassland type and aspen or conifer/shrub ecotones in a mature age class.

No new roads would be constructed within these mechanical treatment areas.

Threatened, Endangered, Proposed, and Experimental Species

This project “**may affect, likely to adversely affect**” lynx, but “**will not jeopardize the continued existence of**” the experimental gray wolf population.

Region 4 Sensitive Species

The project “**may impact individuals or habitat**” of the following R4 Sensitive bird species: *Bald Eagle, Great Gray Owl, Boreal Owl, Three-toed Woodpecker, and Northern Goshawk* but **will not contribute to a trend toward federal listing or cause a loss of viability to the population or species**. Mechanical treatment in the North Willow Creek Unit “**may be beneficial**” to maintenance of present and future eagle nesting and roosting habitat. The project “**may impact individuals or habitat**” of *Columbia Spotted Frog*, but **will not contribute to a trend toward federal listing or cause a loss of viability to the population or species**. The project will result in “**no impact**” to any other R4 Sensitive birds and mammals.

Bridger-Teton National Forest Management Indicator Species (MIS)

In addition to “T&E” and Region 4 Sensitive species, the Bridger-Teton Forest Plan includes harvested trout, big game species, and ecological indicator species as MIS. The project “**may impact individuals or habitat, but will not contribute to a trend towards federal listing or cause a loss of viability for**” *Brewer’s Sparrow, neo-tropical migratory birds, elk, mule deer, moose, bighorn sheep, American marten and boreal chorus frog*. Treatments “**may be beneficial**” to future forage quality and quantity for the four ungulate species. This project is anticipated to have “**no impact**” to all other MIS.

The following project design criteria are necessary to comply with Forest Plan management standards and application of guidelines where field conditions warrant, and to help minimize or assure no adverse impacts to T&E, Sensitive, and MIS species:

- 1.) Active goshawk nest areas will be managed with a 30-acre minimum nest buffer zone and either excluded from treatment or treated with a prescription to maintain and enhance preferred nest stand structural character. A Post-fledgling Family Area (PFA) of approx. 600 acres also will be delineated around the nest site. Human presence within the nest buffer zone and PFA would be restricted during the breeding season of 3/1 through 8/30.

- 2.) Special Food Storage Order (004-000-025) will be followed. If mechanical treatments are contracted, food storage clauses will be included in the contract.
- 3.) Food must be placed within a solid sided building, bear resistant container or hung at least 10 feet off the ground and 4 feet from any supporting structure.
- 4.) Garbage and grease must be stored like food. Never bury garbage.
- 5.) If a nest, den, or important site for any TES species is found within any of the treatment areas, activities may need to be curtailed or additional restrictions imposed to avoid adverse impacts. Identified nest trees and/or den sites will be protected by establishing buffer zones. Buffers will be determined on a case-by-case basis as deemed necessary in order to protect the species present. Buffer zones shall be delineated on the ground prior to or during project implementation as sites are discovered.
- 6.) Human activity will be restricted from 11/15 to 4/30 in big game winter ranges and in elk calving areas from 5/15 to 6/30 if elk are present in the area
- 7.) Prescribe burn units within big game winter range areas should be treated in a mosaic pattern to assure retention of at least 30% of shrub/grassland and aspen or conifer/shrub ecotones in a mature age class. It is desirable that stand replacement patch size in burned forest stands does not exceed 10 acres. Previously treated aspen clones in the Beaver Mountain unit exhibiting a strong aspen sapling structural condition should not be retreated. Stand replacement stuff
- 8.) Prescribed burning is recommended during early spring prior to green-up or late fall after dormancy to help assure a strong sprouting response from cool season grasses and mountain shrubs, especially bitterbrush which is easily susceptible to mortality from fire. Within the Willow Creek prescribe burn unit, the area to the northwest of Willow Creek should not be burned until after at least the lower and middle east side of the unit is treated. This will help minimize the possibility of overutilization by big game on the northwest area where big game use is highest.
- 9.) Large-scale treatments are not recommended from 5/1 to 7/15 in order to avoid disturbance to nesting owls and other neo-tropical migratory birds. Prescribe burn prep treatments such as black-lining units would be acceptable actions during this period. Mosaic burn patterns are recommended.
- 10.) Maintain at least 4 down logs per acre at least 12 inches diameter (at large end) and 20 feet long. Snags and cull trees (of the largest diameter

available) should be maintained in clumps along the perimeter of each unit at or above 4-6 per acre where present.

- 11.) Retain 5-7 tons per acre of coarse woody debris in all project units. If uncertain whether objective can be met in areas currently deficient in downed woody materials, recommend retention of at least two evenly-distributed slash piles per acre.
- 12.) No fuel reduction preparation, treatment or monitoring activities within 800 meters of an occupied bald eagle nest from approximately February 15 through August 15.
 - a. Large-diameter Douglas-fir and spruce trees (18" dbh or greater) within the North Willow Creek mechanical treatment unit will not be cut to avoid loss of bald eagle nest, perch and roost sites. Douglas-fir and spruce trees 12-18" dbh will be retained as future nest trees. **Under the current proposed action no trees of the above mentioned size class will be cut.**
- 13.) All wetlands, ponds, and streams will be identified and mapped during unit layout and no equipment or ignition sources will be allowed in such areas. If riparian vegetation extends further than the defined buffer widths, the buffer will be extended to include all riparian vegetation.

Monitoring

Required Monitoring Lynx Forest Plan Amendment

Report the acres of fuel treatment in lynx habitat within the wildland urban interface, as defined by HFRA, when the project decision is signed. Report whether or not the fuel treatment met the vegetation standards. If standard(s) are not met, report which standard(s) are not met, why they were not met, and how many acres were affected.

Aspen

1. Because it is of particular importance to the health and diversity of aspen to manage browse levels by livestock and other ungulates, the *Browsed Plant Method* which assesses the level of herbivory occurring on young and sprouting aspens will be used for monitoring and inventory of aspen in the North Willow mechanical treatment unit. The method gathers data on the percentage of young plants browsed in a delineated stand of cohorts and the degree to which the population, as a whole, has interrupted or arrested growth. This would provide for an effective and consistent method of evaluating browse effects on this species.

Methods for data collection can be found in the following report –*Browsed Plant Method for Young Quaking Aspen, An Annual Monitoring Method for Determining the Incidence of Use on Sprouts and Young Plants During the Growing Season-Dec. 2004*).

Locations to monitor will be chosen based on *critical area/ key area concept*. An individual aspen clone may be referred to as a *Critical Area* if special management consideration is needed because of biodiversity characteristics OR an individual clone can be described, as a *key area* where the clone is representative sample of a larger stratum of aspen clones at the pasture, herd unit, watershed, or landscape level.

Raptors

2. Before treatments are implemented, broadcast surveys for Northern goshawks and owls will be completed if funds are available to locate possible nest sites within the project area.
3. The cliffs along Beaver Mountain will be surveyed for peregrine falcon activity in April if funds are available.
4. The bald eagle nest site in North Willow will be monitored in March and May to ascertain activity status.

Environmental Effects of Other Resources

Smoke and Air Quality

Project implementation will include the disposal of slash generated through burning of hand piles as well as Broadcast burning over 3631 acres. Burning of hand piles will be undertaken in the fall and early winter months after the first accumulations of snow. With the burning of piles and broadcast burning will come associated impacts of smoke on the subdivisions near the project area as well as to Highway 191/189 just north of the project area. Burning will adhere to Wyoming state guidelines related to smoke emissions and any burning done will have a burn permit secured from the State prior to any ignitions. Burning of piles will only occur on days when atmospheric conditions are such that most emissions drift into the upper atmosphere and away from developed areas. Fire and fuels personnel on the Jackson Ranger District of the Bridger-Teton National Forest will develop prescriptions and utilize smoke dispersal models (such as the Simple Approach to Smoke Emissions Model – SASEM) to help develop plans for minimizing smoke impacts to the surrounding area.

The Bridger-Teton National Forest will notify the public through press releases at least two days prior to any ignitions in the treatment areas. Attempts will be made to make personal contact with adjacent landowners prior to pile ignitions.

A prescribed fire burn plan will be prepared addressing smoke and other issues related to the ignition of piles.

SENSITIVE PLANTS

Threatened & Endangered/Sensitive Plants

United States Fish and Wildlife Service: Currently, four plant species are listed as Threatened or Endangered in the State of Wyoming by the US Fish and Wildlife Service. Of these, only *Spiranthes diluvialis* (Ute ladies' tresses) has a potential of occurring in western Wyoming. However, *Spiranthes diluvialis* has not been located within Teton County, Wyoming nor the Bridger-Teton National Forest. Surveys for *Spiranthes diluvialis* include Walter Fertig's 1998 Plant Species of Special Concern and Vascular Plant Flora of the National Elk Refuge, George Jone's 2000 Survey of BLM – Managed lands along the Snake River in Jackson Hole, Wyoming for Ute Ladies Tresses (*Spiranthes diluvialis*), and a 2001 unpublished survey for Ute Ladies Tresses (*Spiranthes diluvialis*) along the Fall Creek Road Realignment Project, Teton County, Wyoming by Charmaine R. Delmatier. None of these surveys found *Spiranthes diluvialis*.

Forest Service Sensitive Plants: The current Sensitive plant species list for Region 4 (covering Ashley, Bridger-Teton, Caribou, Targhee, and Wasatch-Cache National Forests and Flaming Gorge National Recreation Area in Wyoming) was last revised in 1994 (Joslin 1994). The revised 1994 list contains 18 plant species designated as Forest Service Sensitive Plant Species and are listed in the table below. None of the sensitive

plant species currently designated as Forest service Sensitive was found within the designated project area of this analysis.

<u><i>Agoseris lackschewitzii</i></u>	<u><i>Pink agoseris</i></u>	<u><i>NP</i></u>
<u><i>Androsace chamaejasmine ssp. carinata</i></u>	<u><i>Sweet-flowered rock-jasmine</i></u>	<u><i>NP</i></u>
<u><i>Astragalus diversifolius var. divesifolius</i></u>	<u><i>Meadow milkvetch</i></u>	<u><i>NP</i></u>
<u><i>Astragalus jejunus var. jejunus</i></u>	<u><i>Starveling milkvetch</i></u>	<u><i>NP</i></u>
<u><i>Astragalus paysonii</i></u>	<u><i>Payson's milkvetch</i></u>	<u><i>NP</i></u>
<u><i>Carex incurviformis var. danaensis</i></u>	<u><i>Incurved sedge</i></u>	<u><i>NP</i></u>
<u><i>Carex luzulina var. atropurpurea</i></u>	<u><i>Black & purple sedge</i></u>	<u><i>NP</i></u>
<u><i>Descurainia torulosa</i></u>	<u><i>Wyoming tansymustard</i></u>	<u><i>NP</i></u>
<u><i>Draba borealis</i></u>	<u><i>Boreal draba</i></u>	<u><i>NP</i></u>
<u><i>Draba densifolia var. apiculata</i></u>	<u><i>Rockcress draba</i></u>	<u><i>NP</i></u>
<u><i>Erigeron lanatus</i></u>	<u><i>Woolly fleabane</i></u>	<u><i>NP</i></u>
<u><i>Ericameria discoidea var. linearis</i></u> <u><i>[Haplopappus macronema var. linearis]</i></u>	<u><i>Narrowleaf goldenweed</i></u>	<u><i>NP</i></u>
<u><i>Lesquerella paysonii</i></u>	<u><i>Payson's bladderpod</i></u>	<u><i>NP</i></u>

<i>Parrya nudicaulis</i>	<i>Naked-stemmed parrya</i>	<u>NP</u>
<i>Physaria integrifolia var. monticola</i>	<i>Creeping twinpod</i>	<u>NP</u>
<i>Primula egaliksensis</i>	<i>Greenland primrose</i>	<u>NP</u>
<i>Saussurea weberi</i>	<i>Weber's saw-wort</i>	<u>NP</u>
<i>Symphyotrichum molle [Aster mollis]</i>	<i>Soft aster</i>	<u>NP</u>

Source:

<http://www.npwrc.usgs.gov/resource/plants/wyplant/wyolist.htm>

NP = Not Present

NI = No Impact

MIH = May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species

WIFV* = Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species

BI = Beneficial Impact

Wyoming Species of Special Concern:

Three species (also listed as R4 Sensitive by the Wyoming Natural Diversity Database (WYNDD)) were suspected to occur in the project area. Occurrences of *Astragalus paysonii*, *Draba borealis*, and *Lesquerella paysonii* were listed as being found near the project area by the Wyoming Rare Plant Field Guide (Fertig et al 1994), yet were not observed within the delineated project area.

Citations:

Fertig, W. 1998. Plant species of special concern and vascular plant flora of the National Elk Refuge. Unpublished report prepared for the U.S. Fish & Wildlife Service by the Wyoming Natural Diversity Database. Laramie, WY. 109 pp.

Fertig, W., C. Refsdal, and J. Whipple. 1994. Wyoming Rare Plant Field Guide. Wyoming Rare Plant Technical Committee, Cheyenne. Jamestown, ND: Northern Prairie Wildlife Research

CenterOnline.<http://www.npwrc.usgs.gov/resource/plants/wyplant/index.htm>. (Version 16JUL97).

Jones, George P. 2000. 1999 survey of BLM - Managed lands along the Snake River in Jackson Hole, Wyoming for Ute Ladies Tresses (*Spiranthes diluvialis*). Report prepared for the BLM Wyoming State Office by the Wyoming Natural Diversity Database. Laramie, WY. 22 pp.

Joslin, R.C. 1994. Region 4 Sensitive plant list. Memorandum dated 29 April 1994, USFS Intermountain Region, Ogden, UT.

Heritage Resources

Effects to Heritage Resources

Based on Cultural Resource Report No. BT-07-761, no sites of cultural significance were found in the project area. No specific actions have been identified to protect known or suspected sites.

To date, no Traditional Cultural Properties have been identified within proposed fuel reduction areas. If any heritage resources are discovered during project activities, then the Forest Archaeologist will be notified and the appropriate action taken in consultation with SHPO and Tribal governments.

Alternative 1

There would be no direct, indirect or cumulative effects to heritage resources under this alternative.

Alternative 2

There would be no direct, indirect or cumulative effects to heritage resources under this alternative.

Direct and Indirect Effects

The potential direct effects to heritage resources as a result of prescribed fuel reduction activities vary depending on the type of heritage resource involved and the intensity of the fire. Standing structures such as cabins, mill or mining sites, or other burnable sites can be severely damaged or destroyed by fire. Other sites, such as prehistoric lithic scatters or campsites may receive little or no damage from fire if the fire is a low intensity fire that sweeps quickly across the site. Any mechanical treatment resulting in ground disturbance has a greater potential for affecting prehistoric and historic sites. Piling and burning slash piles has potential for disturbing cultural remains occurring at those locations.

Indirect effects may occur to archaeological sites located in vicinity of specific project areas while accessing work areas or even during work breaks.

Cummulative Effects

Cumulative ground disturbance associated with any activity could be directly correlated to an increased potential to impact heritage resources; the greater the amount of ground disturbance, the greater the potential to impact these resources. Overall, this project involves minimal ground disturbance and is not likely to impact heritage resources. Cumulative effects to heritage resources may occur when fuel reduction work reduces the vegetation cover and archaeological sites might become more visible leading to vandalism or un-authorized artifact collecting.

Cumulative effects to traditional cultural properties are difficult to analyze considering the differing worldviews and belief systems currently in existence and the difficulty in identifying these site types. To date, no Traditional Cultural Properties have been identified within proposed fuel reduction areas. If any are identified during the course of the project, the appropriate actions will be taken in consultation with SHPO and Tribal governments. Employing criteria established through Tribal consultation and compliance with the NHPA may mitigate cumulative effects, but this is uncertain.

The complete specialists report on Heritage Resources can be accessed through the project record.

Threats to Values:

Some publics have voiced concerns over the risk of Prescribed Burning as related to private lands, structures adjacent to burn units.

Alternative 1 (no action): Under the no action alternative, no change in the threats to values would occur related to this project. Threats to values would continue as they have over time. The threat to values from wildfire ignitions near the project area will amplify over time with no treatment of the surrounding vegetation. Fuels will continue to increase in volume over time and the threat from high severity wildfire will increase, both to private values as well as threats to values on National Forest System lands.

Alternative 2: Under the action alternative implementation of prescribed burning can produce some inherent risk. Fire and fuels management staff of the Jackson Ranger District are required under policy to evaluate threats and risk when undertaking any prescribed burning activity. Mitigations and prescription development will be part of plans to implement prescribed burning activities. Prescribed burn plans will set prescription limits and mitigations which will minimize the risk to values and the public.

Conservation Easements:

A comment was received from the Jackson Hole Land Trust regarding donated conservation easements on private lands in the Bryan Flats area. The Land Trust asks that the Forest Service recognize these easements and the issues which may arise if the Forest wishes to access the project area through the lands in conservation easements.

Alternative 1 (no action): No effect will be realized related due to project implementation. Over time as fuels increase adjacent to private lands and conservation easements, the need to suppress a wildfire may have some detrimental effects with the

need to access fire areas and support ongoing suppression actions and protection of private structures.

Alternative 2: Under the proposed action, access to the project area through conservation easements should be minimal. With no proposed road construction or harvest of timber, any access to the project area should be light and with little to no impact.

Fisheries:

Alternative 1 (no action): The no-action alternative could result in a fire with potential to cause mass erosion and impact fish. The proposed project will reduce the probability of a severe fire and implementation will have a low possibility of impacting fish habitat and may impact individuals but not likely to cause a trend to federal listing of a loss of viability for Sensitive and Forest Service Management Indicator Species.

Alternative 2: Analysis of available fisheries data (past and present) and the description of the proposed project as described in the June 20, 2006 project initiation letter it has been determined that short-term impacts of the project “May impact individuals but not likely to cause a trend to federal listing of a loss of viability” to designated BTNF sensitive and management indicator fish species based on the absence of substantially additive effects from past, present, and reasonable foreseeable actions in the analysis area.

Preparation and Consultation

List of Preparers

The following are personnel who provided materials and participated in the Interdisciplinary team study for the project.

Chris Vero	Zone AFMO
Jim Ozenberger	Zone Ecologist
Rick Dustin	SO Landscape Architect
Terry Hershey/Lance Koch	Zone Wildlife Biologist
Dave Fogle	Zone Fisheries Biologist
Dale Dawson	Forestry Technician/recreation
Jamie Schoen	SO Archeologist
Eric Winthers	SO Hydrologist/soils
Liz Davy	SO Silviculturist
Kevin Pfister	Zone FMO
Josh Erickson	Zone Fuels Specialist
Sara Canham	SO Botanist

Individuals, Organizations, and other Agencies Consulted

Agencies

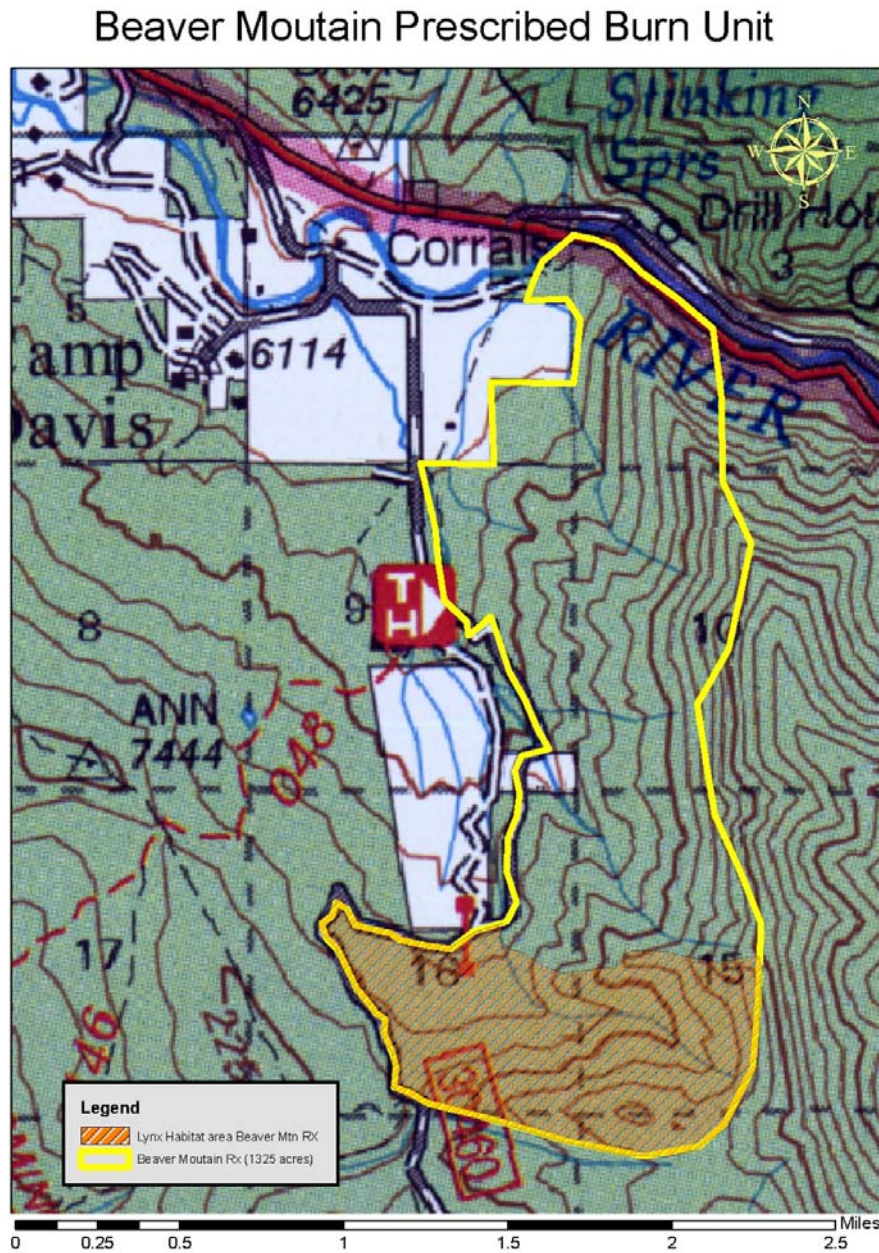
References

References cited and accessed for this analysis can be found in the project record within individual specialists reports.

APPENDIX A

TREATMENT AREA MAPS

Map 1. Beaver Mountain Prescribed Burn Unit



Created by Chris Vero
on March 1st, 2008

Map 2. Willow Creek Prescribed Burn Unit

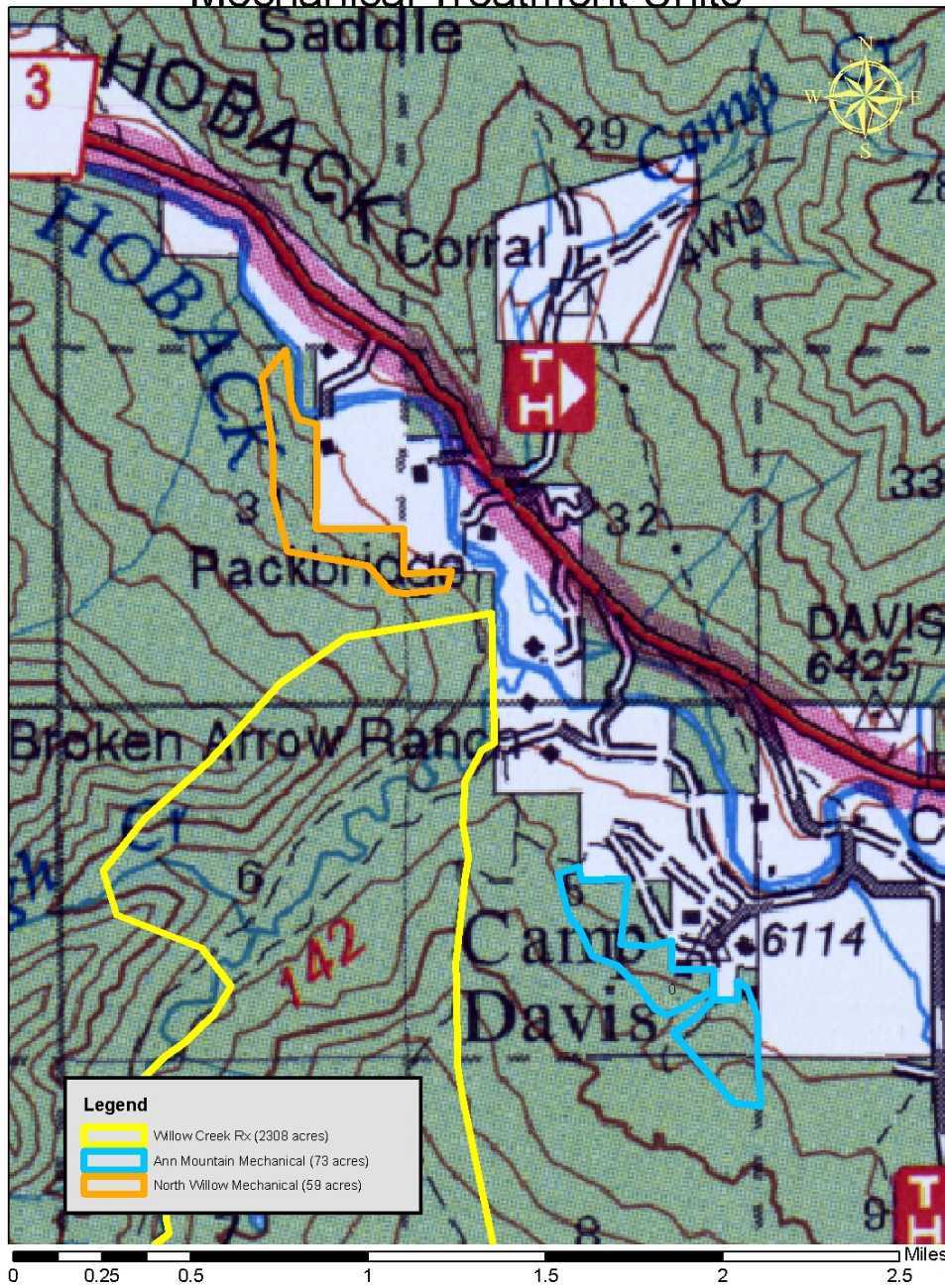
Willow Creek Prescribed Burn Unit



Created by Chris Vero
on March 1st, 2008

Map 3. North Willow and Ann Mountain Mechanical Units

North Willow and Ann Mountain Mechanical Treatment Units



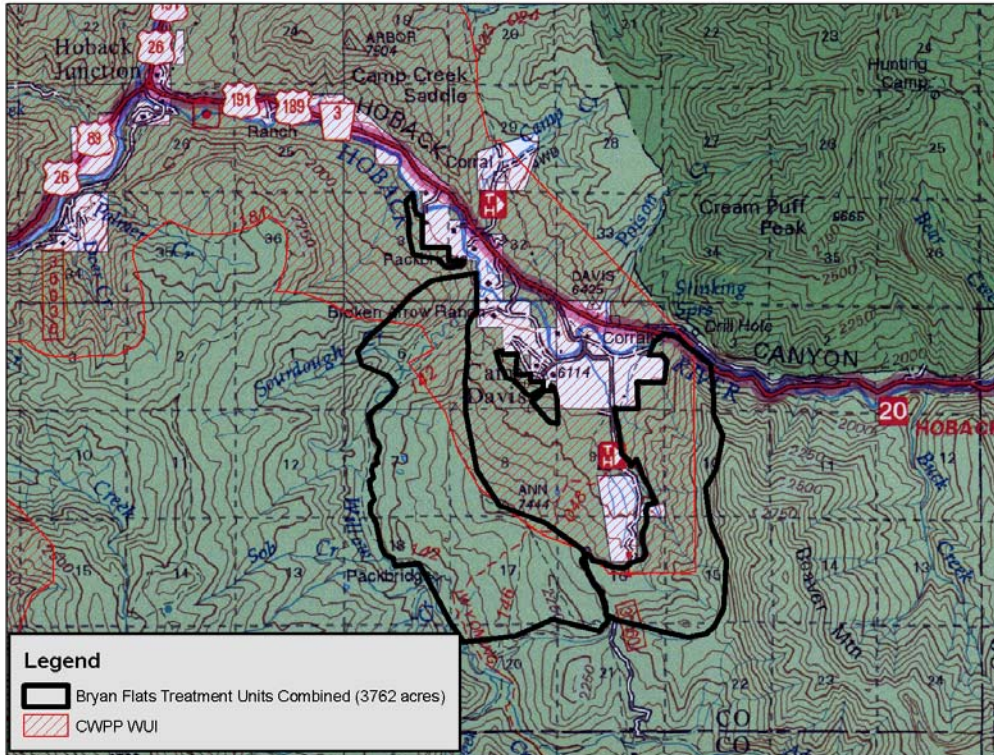
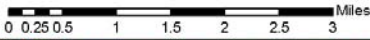
Created by Chris Vero
on March 1st, 2008

APPENDIX B

Identified Wildland Urban Interface (CWPP WUI) in the Bryan Flats area from Teton County, WY Community Wildfire Protection Plan.

**Bryan Flats Fuels Reduction Project
Identified Wildland Urban Interface**

Created by Chris Vero
March 3rd, 2008
NAD 1983 UTM Zone 12N



Appendix C

**PRETREATMENT AND POST TREATMENT PHOTOS OF GROS VENTRE
RIVER RANCH FUELS REDUCTION PROJECT ON THE JACKSON RANGER
DISTRICT – BTNF**

GROS VENTRE RIVER RANCH 2004 PRE/POST PHOTOPOINTS



PRE POINT #1 – STAND EXAM PLOT 6 LOOKING SW – SE CORNER UNIT



POST POINT #1 – STAND EXAM PLOT 6 LOOKING SW – SE CORNER UNIT



PRE POINT 2 – STAND EXAM PLOT SIX LOOKING 170 DEGREES



POST POINT 2 – STAND EXAM PLOT SIX LOOKING 170 DEGREES



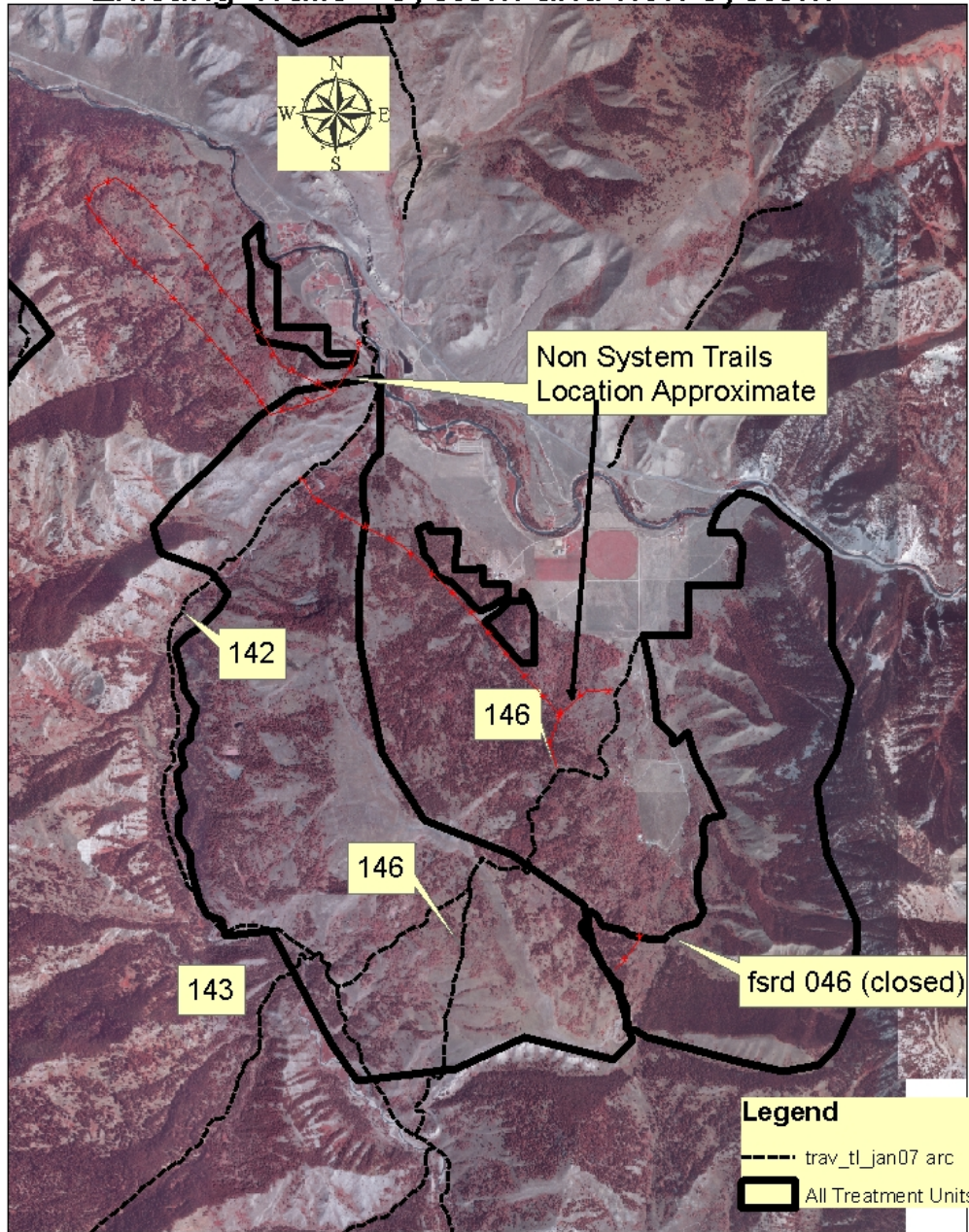
PRE POINT 3 – NEXT TO LARGE DOWN SNAG ABOVE RIVER BLUFFS 34 DEGREES



POST POINT 3 – NEXT TO LARGE DOWN SNAG ABOVE RIVER BLUFFS 34 DEGREES

Appendix D: Location of system and non-system trails within Bryan Flats Fuels Reduction Project Area

Bryan Flats Fuels Reduction Project Existing Trails - system and non system



Created by Chris Vero
July, 2008

0 0.2 0.4 0.8 1.2
Miles

