



**United States
Department of
Agriculture**

**Forest
Service**

**Intermountain
Region**

June, 2008



CALAMITY HAZARDOUS FUELS REDUCTION PROJECT

Environmental Assessment

Caribou-Targhee National Forest

Palisades Ranger District

Idaho Falls, Bonneville County, Idaho

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TTY).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9419 or call (202) 720-5964 (voice and TTY). USDA is an equal opportunity provider and employer.

Chapter 1

Purpose and Need

Chapter 1 – Purpose and Need

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Palisades Ranger District Office in Idaho Falls, Idaho.

Background

National Fire Plan (NFP)

During the last ten years, wildfires have increased in size and intensity within the United States. In 2000, in response to a request by then 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 (USDA Forest Service 2000). This report outlined a strategy to reduce wildland fire threats and restore forest ecosystem health in the interior West. In 2001, the U.S. Congress funded the *National Fire Plan* to reduce hazardous fuel and restore forests and rangeland. In response, the Secretaries of Agriculture and the Interior, along with Western Governors and other interested parties, developed a 10-year strategy and implementation plan for protecting communities and the environment. This plan, coupled with the Federal Wildland Fire Management Policy (2001), forms a framework for Federal agencies, States, Tribes, local governments, and communities to reduce the threat of fire, improve the condition of the land, restore forest and rangeland health, and reduce risk to communities.

Healthy Forest Initiative (HFI)

The Administration launched the Healthy Forest Initiative (HFI) in 2002 to reduce barriers to the timely removal of hazardous fuel. The HFI expedites administrative procedures for hazardous-fuel reduction and ecosystem-restoration projects on Federal land.

Healthy Forests Restoration Act (HFRA)

Sixteen months after HFI was launched, Congress passed the Healthy Forests Restoration Act to reduce delays and remove statutory barriers for projects that reduce hazardous fuel and improve forest health and vigor. The Healthy Forests Restoration Act of 2003 (P.L. 108-148) contains a variety of provisions to expedite hazardous-fuel reduction and forest-restoration projects on specific types of Federal land that are at risk of wildland fire or insect and disease epidemics. The act helps rural communities, States, Tribes, and landowners restore healthy forest and rangeland conditions.

Criteria for projects to be authorized under this act include condition class, wildland urban interface, proximity to communities at risk (Federal Register, January 4, 2001, Vol. 66, No. 3, p. 751-777), and collaboration. The Calamity Hazardous Fuels Reduction Project meets the criteria for an authorized project under HFRA. The Calamity Hazardous Fuels Reduction Project is located within an identified wildland-urban interface (Caribou/Targhee WUI Map, 2007). The Calamity Summer Home special use area is within the boundary of federal lands that are at high risk from wildfire (*Bonneville County Wildfire Protection Plan, November 2004*).

Collaboration

The Idaho Statewide Implementation Strategy for the National Fireplan (NFP) was developed as a framework to guide completion of collaborative, community-based plans to address wildland fire issues. Each county would bring together all groups and agencies responsible for wildland fire suppression to develop a community-based wildland fire mitigation plan.

The Bonneville County Wildland Fire Mitigation Plan was completed in November 2004 by a planning team consisting of representatives of County, State, and Federal Governmental agencies, as well as local home-owners' associations, and county residents and land owners. The purpose of the plan "is to promote public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from wildfires." This plan includes a number of possible fire mitigation activities that could be implemented by local agencies or homeowners. The Plan identifies hazard vulnerability and risk, prioritizes hazards and develops mitigation goals and strategies for implementation. The Bonneville County Wildland Fire Mitigation Plan represents local and regional levels of collaboration.

The Calamity Hazardous Fuels Reduction Project is located within the WUI Zone 4 indentified in the Bonneville County Wildand Fire Mitigation Plan. The project has been developed to respond to the objectives of reducing wildfire fuels and risk in Bonneville County and to implement the Wildfire Mitigation Strategy of the Bonneville County Wildland Fire Mitigation Plan.

Project Area

The project area is located within Bonneville County, approximately .25 miles west of the Palisades Reservoir Dam. The project area includes approximately 273 acres all of which are managed by the Caribou-Targhee National Forest.

Purpose and Need for Action

Purpose

Due to decades of fire exclusion and a number of other factors, forest fuel loadings have accumulated and in many areas vegetation has become unnaturally dense. Where these conditions are found in proximity to Calamity Summer Homes (the "Wildland Urban Interface"), they represent a wildfire hazard to public safety and property. The project area occurs within a "Wildland Urban Interface" area as defined and displayed in the Teton Basin & Palisades Ranger Districts' Wildland Urban Interface Map (2007).

Public and firefighter safety, homes and improvements, and other values can be negatively affected by severe wildfire that burns through these unnaturally dense sites when they are in proximity to the Wildland Urban Interface (WUI).

This project's purpose is to implement the National Fire Plan, specifically goal #2 "Reduce Hazardous Fuels" (A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, August 2001). The project is also designed to meet and implement purpose # 1 of the Healthy Forests Restoration Act of 2003, "(1) to reduce fire risk to communities, municipal water supplies, and other at risk Federal land through a collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects." These two companion purposes have been combined into a project specific purpose as follows:

- 1) Reduce wildfire hazard to the 25 Calamity Summer Homes by completing hazardous fuels reduction on surrounding federal lands.
- 2) Reduce tree crown density, increase canopy base heights, and increase crown spacing to reduce the risk of crown fires.

- 3) Reduce ladder fuels that provide vertical and horizontal fuel continuity thereby reducing crown fire risk.
- 4) Reduce surface fuel load to reduce surface fire intensity.
- 5) Reduce overall horizontal and vertical fuelbed continuity within the WUI to reduce the fire hazard adjacent to the summer homes, while increasing the likelihood of firefighter success and safety.
- 6) Create stand conditions and manage fuel loadings in strategic areas that can be maintained through the use of low intensity prescribed fire or routine fuels reduction maintenance by the summer home permittees on their lots.

Existing Condition (Need)

Fuel conditions for the project area will be discussed relative to the following factors that affect fire behavior:

- Fine fuels (live and dead surface fuels that range in size from 0-3" in diameter) which contribute to fire spread and intensity.
- Ladder fuels that carry the surface fire into the crowns of the overstory vegetation.
- Crown spacing or high crown bulk density that allows rapid fire spread through the crowns of the overstory.

Fine fuel loading in the project area is between 3 and 6.75 tons per acre (NFES 1395, GTR-INT-97). This loading is equivalent to a 1-2 foot fuel bed depth. Using the Fuel Model 2 (fuel bed depth of 1 foot) to simulate the fuel conditions and assuming temperatures greater than 70° and mid-flame windspeeds of 5 miles per hour (typical summer time conditions), continuous flamelengths would exceed 4' (the length at which using ground resources is no longer considered a safe tactic) unless humidities are greater than 75%.

The second critical contributor to extreme fire behavior are ladder fuels which carry the fire from the surface and into the crowns. "Crowning" of individual trees may result in transport of spot fires to distances from .1 mile under light wind conditions up to .5 mile under high wind conditions. These spot fires can ignite flammable roofing materials and needlecast & litter that have not been cleared from roofs. Additionally spotting speeds the spread of a fire, can potentially cause fire spread in an unanticipated direction and could result in entrapment & burnover of residents or firefighters caused by loss of escape routes due to the fire.

While ladder fuels may contribute to individual torching of single trees, continuous overstory crown spacing of less than 20' allows fires to rapidly spread from crown to crown.

In summary, the dense understory mix of small diameter subalpine fir, Douglas-fir and tall mountain brush along with the abundance of ground and ladder fuels provides the fuel bed continuity both vertically and horizontally that can result in a stand replacement crown fire.

Vegetation Conditions:

"Lodgepole and Douglas-fir represent the majority of the overstory. Aspen, Engelman's Spruce and subalpine fir are present in lesser amounts. Advanced regeneration is not well represented except in small disturbance pockets (primarily aspen), most likely due to competition from the dense brush. Evidence of fire and past timber harvest are present in the stand. The major influence on stand development was most likely high grading that occurred approximately 100 years ago. Succession has progressed to the point that the subalpine fir is becoming established and aspen that appears to have dominated much of the stand early in its development is now being replaced by conifer. Mortality has caused the canopy to open over time. A recent mountain pine beetle outbreak has killed the majority of large diameter lodgepole in the stand in the last 5 years." (Silvicultural Prescription, harvest units 1, 2, 3).

“In the unit between the campground & summer homes, lodgepole pine represents the majority of the overstory with pockets of aspen on the south facing slope. Advanced regeneration is not well represented except in small disturbance pockets (primarily aspen), most likely due to competition from the dense brush. Aspen and lodgepole pine came in after a disturbance that occurred approximately 100 years ago. Mortality in the lodgepole pine due to mountain pine beetle has caused the canopy to open over time. Currently there is a mountain pine beetle outbreak that is killing the majority of the >8” dbh lodgepole in the stand.” (Silvicultural Prescription, harvest unit 4).

Stand=041554046790002 Year=2006 Inventory conditions

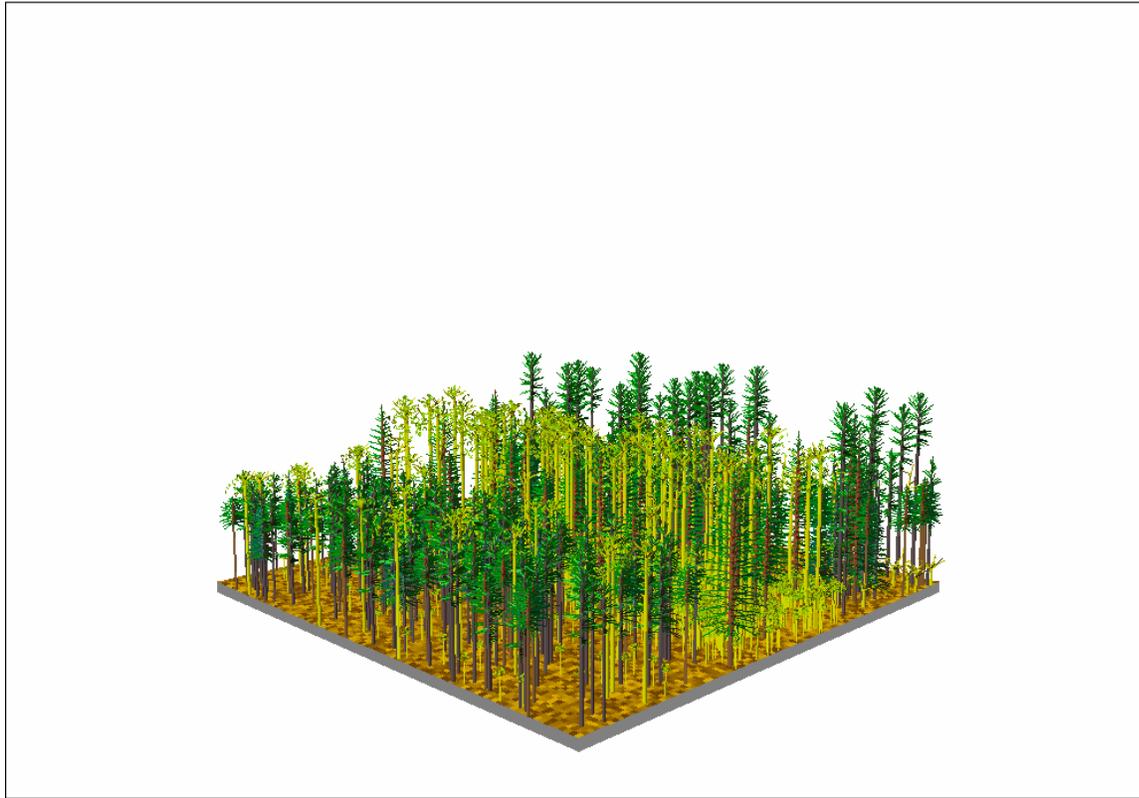


Figure 1.1 *Stand Visualization of current conditions created from stand exam data taken in 2005.*



Figure 1.2 Notice height of the brush present adjacent to this structure & in figure 1.3. Thinning & piling or chipping will be completed adjacent to these structures to create defensible space.



Figure 1.3 Notice the continuity & height of the brush in this photo as well as the two remnant aspen trees present. Structures in figures 1.2 and 1.3 would not likely be defensible during a high intensity wildfire (Calamity Summer Homes Lot 11).

Fire Regime & Condition Class:

The Calamity Hazardous Fuels Project lies in vegetation types that historically experienced medium frequency, mixed severity fires. Most of the project area is considered fire regime III (A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995)) which historically had a fire return interval of every 30 to 85 years which created stand conditions that retained fire resistant large diameter overstory vegetation in some areas & regenerated early seral aspen in others. The project area has missed 1 to 2 fire return intervals which has led to encroachment of subalpine fir in the understory of the aspen and Douglas-fir and places the area at a higher risk for stand replacement fire which would result in the loss of existing remnant large Douglas-fir trees. This transition has moved the project area to Condition Class II – which is moderately departed from historical reference conditions (Represented in Figures 1.1 and 1.2).

Desired Condition

The desired condition for the Calamity Hazardous Fuels project area is open stand conditions and reduced surface fuels that will reduce the risk of large-scale fires affecting the WUI surrounding Calamity Summer Homes. Wildfire incidents that do occur would more likely be less intense surface fires that would be more easily managed and safer for firefighting personnel.

The desired condition would entail species composition that favored fire tolerant trees such as mature Douglas-fir & aspen. Brush heights within the project area are currently very tall, averaging 12' throughout the project area. The target average brush height for the entire project area would be 4-6 feet, with heights no greater than 2-4 feet within 100 feet of the structures. The project area would have a reduction in canopy bulk density, an increase in canopy base height, and a reduction in ladder/surface fuels. This trend toward historic conditions would decrease the probability of stand replacement fire that is the major risk to the environment and adjacent communities.

Figure 1.3



Figure 1.4

Notice the overall tree densities, presence of aspen & lower height of brush that is present. The horizontal fuel continuity has been decreased significantly & fire cannot easily move from the surface into the crowns. (Figures 1.3 and 1.4: Calamity Summer Homes Lot #50).

The desired conditions displayed in Figures 1.3 and 1.4 show how fuels within the project area would be reduced (Basal Area 50-90, <150 trees/acre) to alter fire behavior and achieve lower risk of unnatural and uncharacteristic wildfire.

Proposed Action

This section provides a short summary of the activities proposed for the Calamity Hazardous Fuels Reduction Project. A more detailed description of the proposed action is presented in **Chapter 2** and displayed in Map 2.1.

Commercial thinning of mature and mixed aged stands to reduce standing ladder fuels and create greater crown separation (approximately 72 acres).

Leave a forested appearance. Do not create openings (greater than a 50 ft crown spacing) by removing all trees unless they are dead or bark beetle infestation is present. When choosing between merchantable, healthy lodgepole pine, leave the small diameter tree (more beetle resistant). Do not cut dead trees that have visible nests or nest cavities. Do not cut unique trees that would provide good nesting sites (i.e. wide forks, broken tops with heavy branching). Do not cut large diameter Douglas-fir (>24") unless there is a compelling reason to do so. Vary the spacing of leave trees to take advantage of fire resistance. Leave clumps of 4-5 conifers periodically (especially along the unit boundaries adjacent to open roads or near summer homes) to limit sight distances.

Seed Tree Cut: The unit between the campground & summer homes will be a regeneration cut, stimulating aspen sprouting and lodgepole reseedling. If natural reseedling is not successful, the lodgepole dominated portions of the unit will be planted with lodgepole pine seedlings. (approximately 20 Acres).

Group Selection: Approximately 8 acres of aspen groups with conifer encroachment will be cut to regenerate aspen.

Pre-commercial thinning or mastication* in stands of smaller diameter vegetation to reduce standing ladder fuels and create greater crown separation (approximately 215 acres). **Mastication is the crushing or mowing of brush & small diameter trees using equipment with a rotating head that “chews up” fuels leaving a compacted fuel bed. The end result differs from chipping in that residue varies in size from ½ inch pieces to 6” chunks of material.*

Prescribed fire on those areas following commercial and/or pre-commercial thinning (approximately 273 acres). This would be a mix of hand pile, machine pile burns and broadcast burning, depending upon site conditions. These treatments are designed to reduce the level of ground fuels following the mechanical thinning and ladder fuel removal.

Road construction

Approximately .2 miles of road will be added to Forest Service Road 061A to improve fire protection access to the summer home area. At the present time, this portion of the summer home area is limited to one route in and out. Firefighters, engines & equipment are unable to provide adequate protection in the event of a wildfire without alternate escape routes.

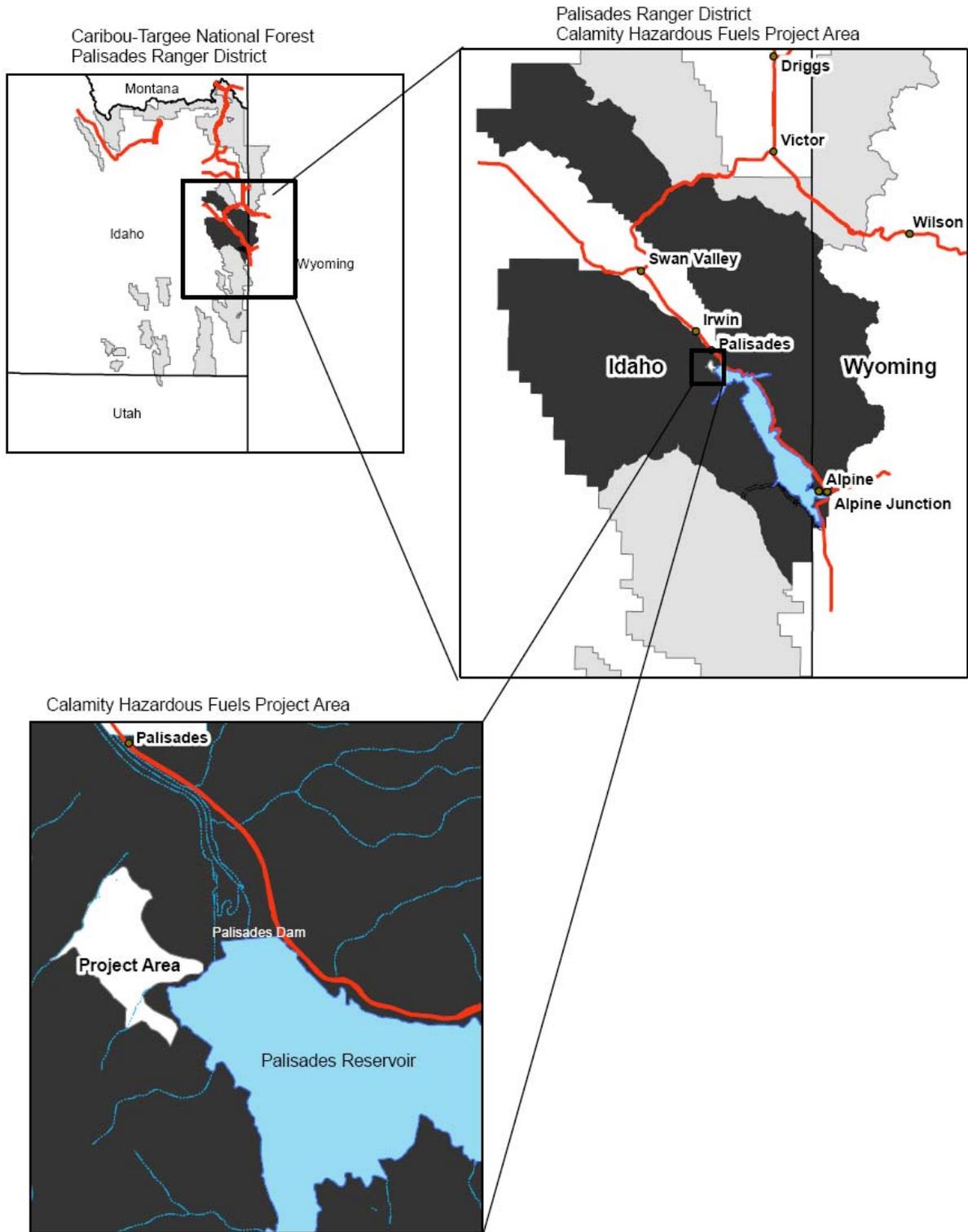
Decision Framework

The Responsible Official for this proposal is the District Ranger of the Palisades Ranger District, Ron Dickemore. The District Ranger will make the following decisions and document them in a Decision Notice following the completion of the environmental analysis and the Pre-decisional Objection Process(36 CFR 218).

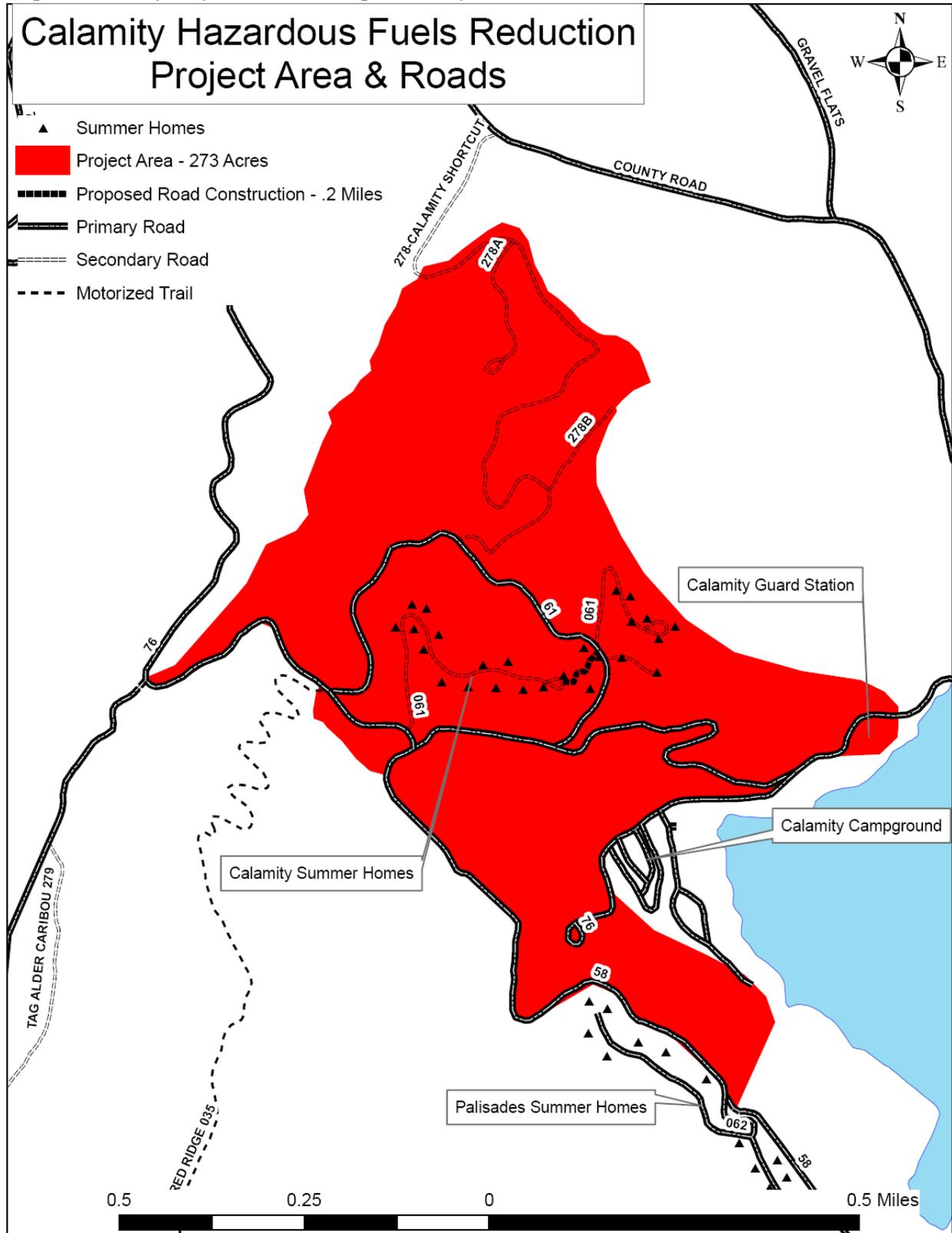
Should the Forest Service manage vegetation on National Forest System Land to protect adjacent communities, subdivisions, private property, and natural resources from the risks associated with wildland fire? If so:

- What vegetation treatment methods should be used?
- Which areas should be treated?
- How many acres of vegetation should be managed?
- If commercial thinning is a selected method, where and how should timber be removed?
- Should some roads be improved, constructed or maintained to provide access for fuel reduction activities & to provide an escape route for residents & firefighters? If so, which?
- Should some roads not needed be closed or decommissioned? If so, which?
- What design features and mitigation measures should be required to meet Forest Plan standards and guidelines and to achieve desired resource objectives?
- What monitoring requirements are appropriate to evaluate implementation of this project?

Map 1.1 Vicinity and Location Map



Map 1.2 Calamity Project Area & Transportation System



Relationship to the 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 Calamity Hazardous Fuels Reduction 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 Caribou-Targhee National Forest. This document is tiered to the Land and Resource Management Plan for the Targhee National Forest (Revised Forest Plan, USDA Forest Service 1997).

Chapter III of the Forest Plan describes management direction to guide Forest management to achieve desired outcomes and conditions. This direction is presented in three sections: (1) Forest-wide management direction (2) Subsection description and direction and (3) Management prescriptions. The Forest-wide management direction provides general direction for the various forest resources, while the management area description and direction describes specific areas in detail, highlights resource areas of importance or concern, and sets the stage for specific actions that can be implemented to resolve or address those concerns. Activities within the various subsections are further refined by management prescription categories (MPCs), several of which may occur in any given management area. Management prescriptions are defined as: “Management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives”.

Most of the project area (203 Acres) occurs within a MPC 5.1.3(b) which is described as:

5.1.3 – Timber Management (No clearcutting, Urban Interface)

“The purpose of this prescription is to allow timber management with no clearcutting, and to allow fuels management within and adjacent to urban areas of the forest.” Goal: Manage vegetation and fuels to minimize fire risk for urban facilities within the interface.(RFP, III-137)

MPC 5.1.3 Standard and Guidelines	
Standard	No clearcutting is allowed in this prescription area.
Guideline	Wildfires will normally be suppressed using control strategies during the fire season. Pre and Post-fire season strategies may include containment, confinement, or control.
Guideline	Prescribed fire may be used to reduce fuel loading; obtain natural regeneration; improve livestock forage conditions; for wildlife habitat improvement; and for other purposes that meet the needs of this prescription.
Guideline	Maintain snag habitat at 40 percent of the biological potential for woodpeckers.

Approximately 15% (43 Acres) of the project area occurs within MPC 4.2 described as:

4.2 – Special Use Permit Recreation Sites

“This prescription applies to ski areas, resorts, summer home sites and organization camps that are allowed under a special use permit.” (RFP III-128) Goals: Protect and enhance a natural appearing environment to the extent possible while providing for private and group recreation opportunities. Strive to incorporate opportunities for watchable wildlife.

MPC 4.2 Standards and Guidelines	
Standard	Control insects and disease consistent with visual objectives
Standard	All wildfires that threaten these areas will be aggressively suppressed.
Standard	
Guideline	Prescribed fire generally will not apply here. It may be used, however, to achieve resource objectives.
Guideline	Natural fuels will be reduced or otherwise treated so the potential fireline intensities will not exceed 100 BTU per second per foot on 90 percent of the days during the regular fire season.
Guideline	Stipulate removal of unsafe and/or dead trees in the special use permit. Native species may be planted to provide cover when naturally-occurring vegetation is inadequate.

Approximately 5% (13 Acres) of the project area occurs within MPC 4.1 described as:

4.1 – Developed Recreation Sites

“This prescription applies to existing campgrounds, picnic areas, boating sites/ramps, and other facilities such as trailheads, snow parks, scenic and wildlife viewing areas, fishing access points, and inventoried National Forest recreation sites... The area around the campground will generally exhibit a variety of visual conditions, depending on past insect, disease, and fire activity and management’s response to those disturbances.” (RFP III-125) Goals: Manage aspen for its value in providing seasonal color.

MPC 4.1 Standards and Guidelines	
Standard	Control insects and disease consistent with recreational objectives.
Standard	All wildfires that threaten these areas will be aggressively suppressed.
Guideline	Prescribed fire generally will not apply here. It may be used, however, to obtain natural regeneration in preference to soil-disturbing activities.
Guideline	Natural fuels will be reduced or otherwise treated so the potential fireline intensities will not exceed 100 BTU per second per foot on 90 percent of the days during the regular fire season.
Guideline	VQO – Manage for a full range from retention to modification. Facilities are often evident but harmonize and blend with the natural setting.

Less than 10 acres of the project area occurs within MPCs 8.1 & 6.1(b).

8.1 – Concentrated Development Areas (8 Acres)

6.1(b) – Range Management (1 Acre)

Forest Plan Management Areas

The Calamity Hazardous Fuels project area lies entirely within the Caribou Range Mountains Subsection (M331Di) discussed on pages III-63-64 in the Revised Forest Plan. The primary fire management goal in this subsection is as follows:

Develop a fire management plan which allows for natural fire and which considers summer home development and risk around the Palisades Reservoir.

Caribou Subsection Standards & Guidelines	
Guideline	Within one mile of the Palisades Reservoir and the South Fork of the Snake River, emphasis will be given to managing old growth Douglas-fir, spruce and cottonwood habitats for wildlife species

Public Involvement

As this project was originally authorized under the HFI Hazardous Fuels Categorical Exclusion the NEPA process began when the proposed action was disclosed to the public in July, 2005. A scoping document was sent to 86 individuals, agencies and interested groups for the 30 day comment period. Scoping was conducted for special use permittees at a summer home association meeting. This project was also published in the Post Register in Idaho Falls, Idaho on July 20th 2005. The public was invited to submit comments through mail, e-mail, or oral comment. Due to a court ruling concerning notice, comment and appeals for categorically excluded projects such as this one, comments were sought a second time in November, 2005. The notices were sent to the same individuals, agencies, and interested groups for an additional 30 day comment period.

Due to a 9th circuit court decision all HFI Hazardous Fuels Reduction Categorical Exclusions authorized under FSH 1909.15 31.2 (10) but not yet completed were suspended as of December, 2007 and must be reauthorized by a new decision. As such, March 24th, 2008 was the third time that this project had been brought forth for public scoping & formal comment.

Issues

The scoping and public comment process allows the public and other agencies to raise any concerns relative to the Proposed Action or Alternative. Identification of issues included review of comments, input from Forest Service resource specialists and review of the Forest Plan. Comments received during scoping and public comment opportunities were evaluated against the following criteria to determine whether the concern was a major factor in the analysis and alternative formulation process.

- Was the concern relevant to, and within the scope of the decision being made and did it pertain directly to the proposed action?
- Has the concern been addressed in a previous site-specific analysis, such as in a previous Environmental Impact Statement or through legislative action?
- Could the concern be resolved through mitigations in all action alternatives?
- Could the issue be resolved through project design in all alternatives?

Two issues came forth through the interdisciplinary process:

1. Wildfire hazard adjacent to & surrounding the Calamity Summer Homes site.
2. Potential hazard & recreational conflict due to increased traffic on the Calamity Campground access road for the duration of project implementation.

Legal Requirements and other Specifically Required Disclosures

The proposed action was developed to meet the laws, regulations, and requirements relating to federal natural resource management. The Interdisciplinary Team found the proposed action to be consistent with all the pertinent law, regulations, and coordination requirements. Although all such requirements would be met, the following summarizes the key concerns most often noted. Additional detail is found elsewhere in Chapters 3 and/or the project record for the Calamity Hazardous Fuels Reduction Project.

Clean Air Act of 1970, as amended

The purpose of the Clean Air Act is to protect and enhance the quality of the nation's air resources. The Calamity Hazardous Fuels Reduction Project is designed to meet the standards of this act through management practices that consider air quality, health, and visibility standards.

This project would be implemented according to the Fire Management Plan and a prescribed burn plan, which is Forest Service policy. The State of Idaho requires that all burn plan terms and conditions relating to the control of smoke be followed. The prescribed burning plan includes specific implementation guidelines for smoke management and contingency.

As part of a two state (Idaho and Montana) Airshed Group, the Caribou-Targhee National Forest must coordinate all proposed prescribed burning activities with the airshed group. The monitoring unit gives daily advisories based on predetermined airsheds and other planned burn events. The objective of this group is to ensure that, based on meteorologic conditions; a given airshed is not overloaded with too many burn activities at one time. The Forest Service would not initiate any burning activities if Idaho Department of Environmental Quality declares an Air Pollution Episode or if the monitoring unit does not approve planned burns.

The nearest Class I area is the Grand Teton National Park, approximately 27 miles northeast of the project area. The Idaho Department of Environmental Quality along with other state air quality regulators, Western Regional Air Partnership, and land management agencies are currently developing visibility goals, monitoring plans, and control measures to comply with regional haze visibility standards in all Idaho and Montana Class I areas. Idaho is expected to have a final State Implementation Plan (SIP) by 2008. If the SIP is in place during the implementation phase of this project, activities will be evaluated to ensure they are consistent with the SIP.

No Prevention of Significant Deterioration (PSD) permit is required because prescribed burning is not a stationary pollution source. Prescribed burning is considered to be a temporary area pollution source.

The project area is outside all state non-attainment areas, therefore, the Conformity process with the US Environmental Protection Agency and Idaho Department of Environmental Quality is not required.

Clean Water Act of 1948, as amended and Section 303(d) Listed Waters

The objective of this act is to restore and maintain the integrity of the nation's waters. This objective translates into two fundamental goals: (1) eliminate the discharge of pollutants into the nation's waters; and (2) achieve water quality levels that support beneficial use designations. This act establishes a non-degradation policy for all federally proposed projects. This would be accomplished through implementation and monitoring of Best Management Practices (BMPs *Best Management Practices*). Design features, including Best Management Practices, associated with proposed harvest and road-opening activities would minimize soil disturbance and sediment delivery during and following implementation (EA Chapter 2-Mitigations and Design Features). The effectiveness of these Best Management Practices applied to timber harvesting and road construction has been extensively studied (Seyedbagheri, 1996; NCASI, 1999; IDHW-DEQ 1997). Application of these design features would be expected to decrease the short and long-term likelihood of sediment delivery to streams in quantities sufficient to affect water quality conditions (EA Chapter 3, Watershed Resources).

Endangered Species Act of 1973, as amended

The purpose of this act is to provide for the conservation of endangered fish, wildlife, plants, and their habitats. Biological Assessments have been prepared to document possible effects of proposed activities on endangered and threatened species within the analysis area potentially affected by the project (BE/BA for Calamity Hazardous Fuels Reduction Project, Project Record). The effects analysis completed and documented in the BE /BA was done under the section 7 counterpart regulations of the Endangered Species Act (Federal Register, December 8, 2003), and is in compliance with those regulations and the March 3, 2004, Alternative Consultation Agreement between the Forest Service, FWS, and NMFS.

Executive Order 13175 on Consultation and Coordination with Indian Tribal Governments

This order established a requirement for regular and meaningful consultation between federal and tribal government officials on federal policies that have tribal implications.

Migratory Bird Treaty Act, Executive Order 13186

This act and subsequent executive order and memorandum of understanding between the USDI Fish and Wildlife Service and USDA Forest Service provide for the protection of migratory birds. This project may result in an unintentional take of individuals during timber harvest, thinning, and prescribed fire activities. However, the project complies with the Fish and Wildlife Service Director's Order #131 related to the applicability of the Migratory Bird Treaty Act to federal agencies and requirements for permits for "take". In addition, this project complies with Executive Order 13186 because the analysis meets agency obligations as defined under the January 16, 2001 Memorandum of Understanding between the Forest Service and Fish and Wildlife Service designed to complement Executive Order 13186. Migratory bird species are analyzed and discussed in the BE/ BA found in the Project Record, and in the Sensitive, MIS, and other Species of Concern sections in Chapter 3, Wildlife Resources in this EA. If new requirements or direction results from subsequent interagency memorandums of understanding pursuant to Executive Order 13186, this project would be evaluated to ensure that it is consistent

Healthy Forest Restoration Act of 2003

The Healthy Forest Restoration Act (HFRA) was signed into law (P.L. 108-148) on December 3, 2003. The intent of HFRA is to expedite the planning and implementation of hazardous fuels reduction projects on federal lands. Criteria for projects to be authorized under this act include Condition Class, location to communities at risk and collaboration (Federal Register, January 4, 2001, Vol. 66, No. 3, p. 751-777). The Calamity Hazardous Fuels Reduction Project meets the criteria for an authorized project under HFRA.

This law provides direction in developing environmental analyses and alternatives for authorized fuel reduction projects. A hazardous fuel reduction project is considered authorized [HFRA section 102(a) (1)] if it is: "(1) Federal land located in a wildland urban interface area".

The Calamity Hazardous Fuels Reduction Project is located in an area identified as wildland urban interface, has a high fire hazard, and has been identified as a priority for treatment in the Bonneville County Wildland Fire Mitigation Plan (Bonneville County, November 2004). As such, the Calamity Hazardous Fuels Reduction Project is an authorized fuel reduction project according to the HFRA guidelines.

Idaho Forest Practices Act of 1974

The purpose of the Idaho Forest Practices Act is to assure the continuous growth and harvest of forest trees, and to maintain forest soil, air, water, vegetation, wildlife, and aquatic habitat. The Act requires forest practice rules for state and private lands, in order to protect, maintain, and enhance the state's natural resources. BMPs (Best Management Practices) and contract provisions would be used to meet specific Idaho Forest Practices Act regulations. In addition, other site-specific mitigation measures are listed in Design Features and Mitigations, Chapter 2.

State Water Quality Standards

The project would not cause any of the General Surface Water Quality Criteria to be exceeded as none of the substances or materials listed would be used in conjunction with this project. Sediment would not exceed standards due to application of the BMPs. Surface Water Quality Criteria for Use Classification standards would not be affected. The project does not involve fecal coliform or toxic substances.

Effects on Wetlands and Floodplains

None of the alternatives proposed construction that would affect any other floodplain and wetland areas. The floodplains and wetlands would be protected through mitigation measures such as buffer strips that conform to Executive Order 11988 (floodplains) and Executive Order 11990 (wetlands). Any activities within floodplains would also require consultation with the EPA and Army Corps of Engineers through the Dredge and Fill (404) permitting process.

Nonpoint Source Water Quality Program for the State of Idaho

This program provides for the protection of Idaho's waters from non-point source pollutants. A Federal Consistency Checklist provides for compliance with the non-point source water quality provisions of the Federal Clean Water Act for the State of Idaho as agreed to in a Memorandum of Understanding (MOU) between the responsible State of Idaho and Federal land management agencies. This project meets the requirements of the MOU by completing the Federal Consistency Checklist, which is located within the project analysis file. Any portions of the checklist that are relevant to the decision to be made for this project are analyzed in detail within this environmental assessment.

The Water Quality Federal Consistency Checklist for Planned Projects documents compliance with the MOU between the Forest Service and the State of Idaho for implementing the Nonpoint Source Water Quality Program in the State of Idaho (Water Quality Federal Consistency Checklist-Calamity Hazardous Fuels Reduction Project, Project Record).

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

NEPA establishes the format and content requirements of environmental analysis and documentation. The process of preparing this environmental analysis was undertaken to comply with NEPA and its implementing regulations

National Forest Management Act of 1976 (NFMA)

This act guides development and revision of National Forest Land Management Plans. NFMA has several provisions, including preparation requirements for timber sale contracts and maintenance of biodiversity. All action alternatives were developed to comply with NFMA and its implementing regulations. This project has been determined to be consistent with the goals, objectives, standards and guidelines in the 1997 Revised Forest Plan.

Environmental Justice (E.O. 12898)

Executive Order 12899 directs federal agencies to identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. Based on the analysis contained in this EA, no such issues or effects were determined and the proposed action and alternatives is in compliance with Executive Order 12898

National Historic Preservation Act (NHPA) of 1966, as amended

Section 106 of NHPA requires federal agencies to consider the effects of their activities and programs on historic properties. Historic properties are significant cultural resources that are included in or eligible for inclusion in the National Register of Historic Places. The procedures for implementing Section 106 are outlined in the U.S. Code of Federal Regulations (36 CFR Part 800). These procedures include:

- ✓ Identification and evaluation of historic properties in the Area of Potential Effects (APE).
- ✓ Assessment of effects an undertaking may have on those historic properties.
- ✓ Consultation on the effects of undertakings between the Forest Archeologist and State Historic

Preservation Officer (SHPO).

In the event of adverse effect determinations:

- ✓ Consultation with the Advisory Council on Historic Preservation (ACHP).

This process requires consultation with SHPO, ACHP, and in certain circumstances, Indian tribes. The Idaho State Historic Preservation Officer (SHPO) has been consulted concerning the proposed activities of the Calamity Hazardous Fuels Reduction Project. The Forest Service will reach concurrence with SHPO, indicating a No Adverse Effect determination for cultural resources on this project prior to implementation.

Roadless Area Conservation Rule (RACR)

Prohibits new road construction and reconstruction in inventoried roadless areas on National Forest System lands. Prohibits cutting, sale, and removal of timber in inventoried roadless areas.

The Calamity Hazardous Fuels Reduction Project does not include portions of any inventoried roadless areas.

Project Record Availability

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

Chapter 2

Alternatives

Chapter 2 - Alternatives

This chapter discusses the proposed action and one action alternative in detail it also addresses the no-action alternative in a summary manner. This chapter includes a discussion of mitigation measures and other design features, monitoring, project description, and maps.

Alternative 1 – No Action

This alternative would continue present management of the recreation areas. No commercial thinning, mastication, or prescribed fire would occur, construction of the fire access road would not occur. Limited thinning & piling treatments as well as Hazard Tree removal within the summer home area would continue as allowed under the special use permit.

Alternative 2 - Proposed Action

Summary

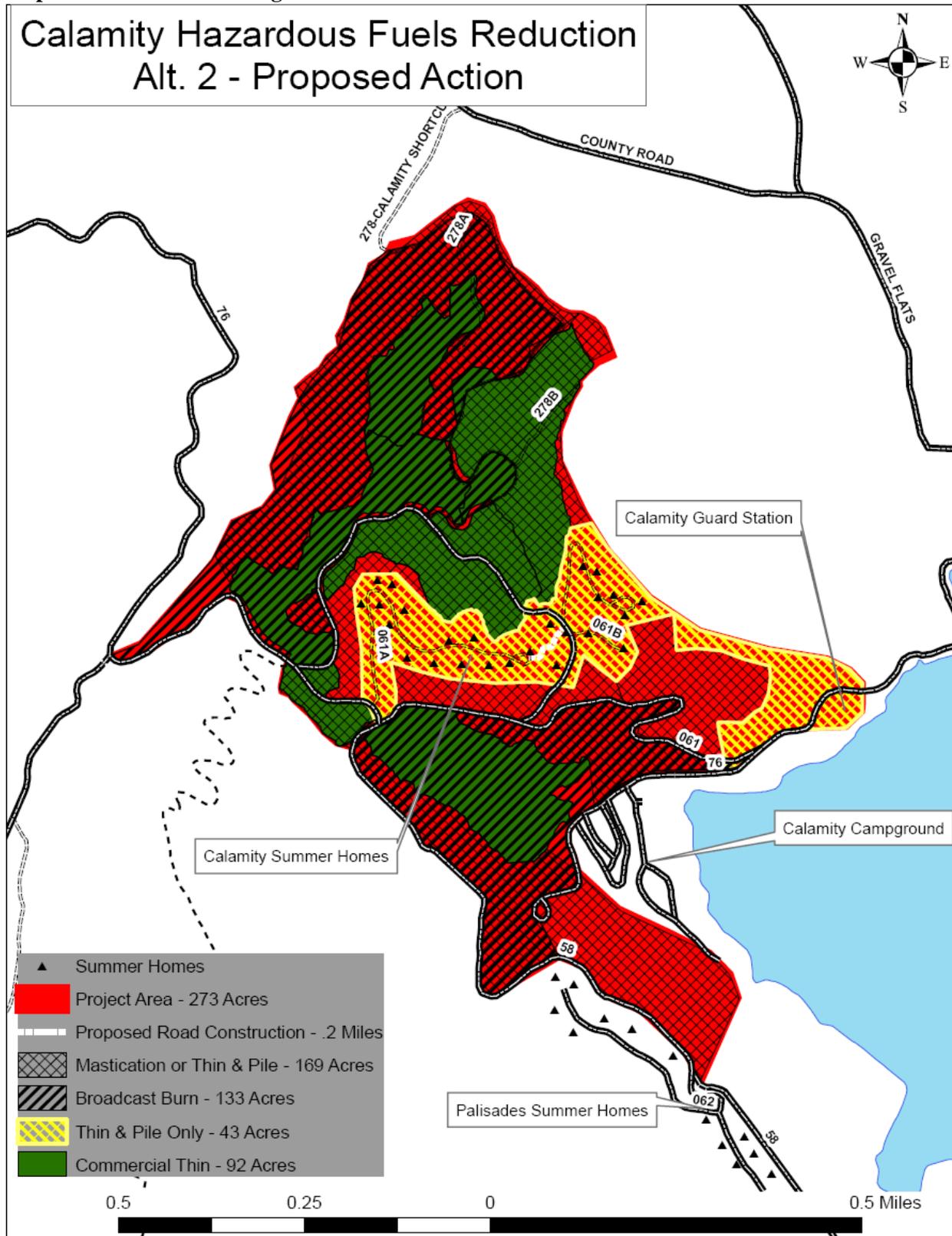
This project is a qualified Healthy Forest Restoration Act project and consists of proposed vegetation management on approximately 273 acres with the primary purpose of hazardous fuels reduction to reduce wildfire risk to homes and structures in the Calamity Summer Home sites. The Calamity area is identified as the highest priority for treatment by the Bonneville County Wildfire Protection Plan.

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 the Wildland Urban Interface as well as the issue of hazardous fuels adjacent to the Calamity Summer Homes. The actions described in Table 2.1 will move the project area toward the desired condition by mechanically treating vegetation (primarily commercial and pre-commercial thinning) and performing prescribed burning.

Proposed Action – Activities		
Category	Unit of Measure	Amount
Commercial thin	acres	72
Seed Tree Cut	acres	20
Mastication or Thin & Pile	acres	169
Thin & Pile no Mastication	acres	43
Prescribed fire		
Broadcast Burn	acres	133
Pile Burn	acres	43 – 212
Biomass Removal in lieu of Pile Burn	acres	43 - 212
Road Construction	miles	.2
Road Improvement	miles	.35

Table 2.1 The table above covers the acres of each activity within the project area. However, it should be noted that a single acre might receive as many as 3 treatments as shown in Maps 2.1-2.4.

Map 2.1 Locations of All Vegetation Treatments in Alternative 2



Mechanical Vegetation Treatment Activities:

Commercial thinning - Approximately 72 acres.

Description: Leave a forested appearance. Do not create openings (greater than a 50 ft crown spacing) by removing all trees unless they are dead or bark beetle infestation is present. When choosing between merchantable healthy lodgepole pine, leave the small diameter tree (more beetle resistant). Do not cut dead trees that have visible nests or nest cavities. Do not cut unique trees that would provide good nesting sites (i.e. wide forks, broken tops with heavy branching). Do not cut large diameter Douglas-fir (>24") unless there is a compelling reason to do so. Vary the spacing of leave trees to take advantage of fire resistance. Leave clumps of 4-5 conifers periodically (especially along the unit boundaries adjacent to open roads or near summer homes) to limit sight distances.

Method: Ground based tractor or tractor jammer systems will be the primary method of commercial thinning operations. Separate overstory/mid-story tree crowns by 10-20 ft (15 ft optimum). Trees can be closer if adjacent to openings.

Preference for cut trees - (species preference/merchantability): 1) subalpine fir (8+'' dbh), 2) lodgepole pine (7+'' dbh), 3) Douglas-fir (8+'' dbh), 4) aspen (8+'' dbh). Where viable aspen is present and for 60' around the viable aspen: Remove all but 10-20 square feet of live conifer basal area (leave largest diameter DF if possible) per acre. In areas of extensive aspen (greater than 2 acres), tend toward the higher BA. Where trees are densely stocked, do not remove more than 50% of the tree canopy (to reduce the likelihood of windthrow). **Undesirable trees:** Merchantable dead or imminent mortality (i.e. bark beetles, severe rot, etc.), trees adjacent to powerlines with >15% lean, subalpine fir >8'' dbh, trees that do not appear windfirm (not open grown, crown generally <30% of tree length), poor form (crooks, sweeps or forking), disease or damaged, unhealthy foliage, lodgepole pine >7'' dbh, Douglas-fir <12'' dbh (poor fire resistance), high dead lower limb retention (poor fire resistance). **Group Selection:** Approximately 8 acres of aspen groups with conifer encroachment will be cut to regenerate aspen within the commercial thinning area.

Stand=041554046790003 Year=2007 Post cutting



FIGURE 2.1 Forest Vegetation Stand Visualization Simulation of Post-Commercial Thin treatment appearance.

Seed Tree Cut: The unit between the campground & summer homes will be a regeneration cut, stimulating aspen sprouting and lodgepole reseeding. If natural reseeding is not successful, the lodgepole dominated portions of the unit will be planted with lodgepole pine seedlings. (approximately 20 Acres).

Mastication or Thin & Pile - Approximately 169 acres.

Description: This is an intermediate silvicultural prescription designed to reduce stand density, understory ladder fuels, and the proportion of shade tolerant tree species. The silvicultural treatment would generally retain the larger and more fire resistant seral species, as well as increase or maintain crown separation and tree spacing to reduce the future risk of crown fire events. Seral tree species such as aspen and Douglas-fir would be favored for retention in the treated areas. Following treatment, a forested canopy would remain. The thinning would employ variable spacing to favor the largest & healthiest dominant/co-dominant trees. This treatment would be applied to approximately 169 acres (40% of the NF Lands within the project area).

Method: The silvicultural prescription would include the crushing of trees & brush using equipment or hand thinning and piling of trees, limbs, & brush using chainsaws. Trees less than 12 inches DBH would be thinned to a residual density of 50 - 120 trees per acre depending on initial stand density and habitat type. Priority for removal will be the smaller and more suppressed or crowded trees in the stands. Species such as healthy dominant Douglas-fir and aspen will be favored for retention & subalpine fir will be targeted for removal. Forty to sixty percent of understory brush in this area will be treated in a mosaic pattern to interrupt fire spread across the landscape.

Where access and economics permit, trees may be thinned & slash may be removed for miscellaneous forest products (such as firewood, and post and poles).

Thin & Pile Only - Approximately 43 acres.

Description: This treatment is essentially the same as above except that mastication is excluded as a treatment option due to the proximity of the summer homes or slopes in excess of 40%. Additionally the final product of this treatment must be aesthetically pleasing & when possible maintain privacy screening for the summer home sites. Treatment will bring vegetation in line with the Targhee Revised Forest Plan Guideline for Special Use Permit Recreation Sites specifying that "Natural fuels will be reduced or otherwise treated so the potential fireline intensities will not exceed 100 BTU per second per foot on 90% of the days during the regular fire season" (RTFP-1997, p. III-131)

Method: Emphasis will be placed on trimming & removal of ladder fuels within 30' of all summer homes as prescribed by *Firewise Landscaping Checklist & Firewise - Around Your Home* (<http://www.firewise.org/resources/homeowner.htm>). The silvicultural prescription would include the cutting of trees less than 12 inches DBH to a residual density of 30 - 100 trees per acre depending on initial stand density and tree size. Priority for removal will be the smaller and more suppressed or crowded trees in the stands. Species such as healthy dominant Douglas-fir and aspen will be favored for retention. Thinned trees may be removed for miscellaneous forest products (such as firewood, and post and poles) where access and economics permit. All conifer trees left on site will have the lower 1/3 of the tree limbed to reduce ladder fuels that can carry fire from the surface into the crown. Twenty five to sixty five percent (depending on initial density) of understory brush will be treated to reduce fuel bed continuity. In areas where brush taller than 6' is present, brush may be "groomed" rather than removed entirely.

Implementation: This treatment may be implemented by the summer home special use permittees on their lots based on the following responsibilities identified in their permits:

IV RESPONSIBILITIES OF THE HOLDER:

“C. The holder shall protect the scenic and aesthetic values of the National Forest lands as far as possible consistent with authorized use...

F. The holder assumes all risk of loss to improvements resulting from acts of God or catastrophic events.

G. The holder has the responsibility of inspecting the site, authorized right-of-ways, and adjoining areas for dangerous trees, hanging limbs, and other evidence of hazardous conditions which could affect the improvements and or pose risk of injury to individuals...After securing permission from the authorized officer, the holder shall remove such hazards.” (Calamity Summer Homes Special Use Permit)

Prescribed Fire Treatment Activities:

All prescribed fire treatments are designed to reduce the level of hazardous ground fuels following initial mechanical thinning/mastication and ladder fuel removal.

Broadcast Burning: 133 acres.

Broadcast burning will be a secondary treatment to be administered after commercial thinning or mastication has thinned the crowns & removed aerial hazards from the units. Broadcast burn units will use existing roads, trails, & waterways to prevent fire spreading into the summer home area or beyond the project boundary.

Pile Burning or Chip & Remove of residual slash: 43-215 acres.

Pile burns may occur within all thin & pile treatments and will be carefully monitored to prevent undesired fire spread. Fuels that are hand piled within the units or machine piled at landings as a result of commercial thinning activities may be removed as a biomass product (chips, firewood, etc...) in lieu of burning on site. The range in potential acres is due to the option of treating areas with either mastication or thinning & piling. Due to the potential for materials to be “thrown” from the equipment, the area immediately around the summer homes will **not** be masticated.

Other Activities:

Road construction

Approximately .2 miles of road will be added to Forest Service Road 061A to improve fire protection access to the summer home area. At the present time, this portion of the summer home area is limited to one route in and out. Firefighters, engines & equipment are unable to provide adequate protection in the event of a wildfire without alternate escape routes.

Road Improvement

Various roads within the summer home area need improving. The Calamity shortcut road #278 is a Forest Development Road that provides access through the project area. The roadway/shoulders are overgrown with brush and trees, narrow portions of the road will not accommodate harvesting equipment, and the surface is rutted and washed. Clearing and grubbing, widening of narrow areas, and blading and shaping will be necessary. The installation of a gate on the north end is proposed.

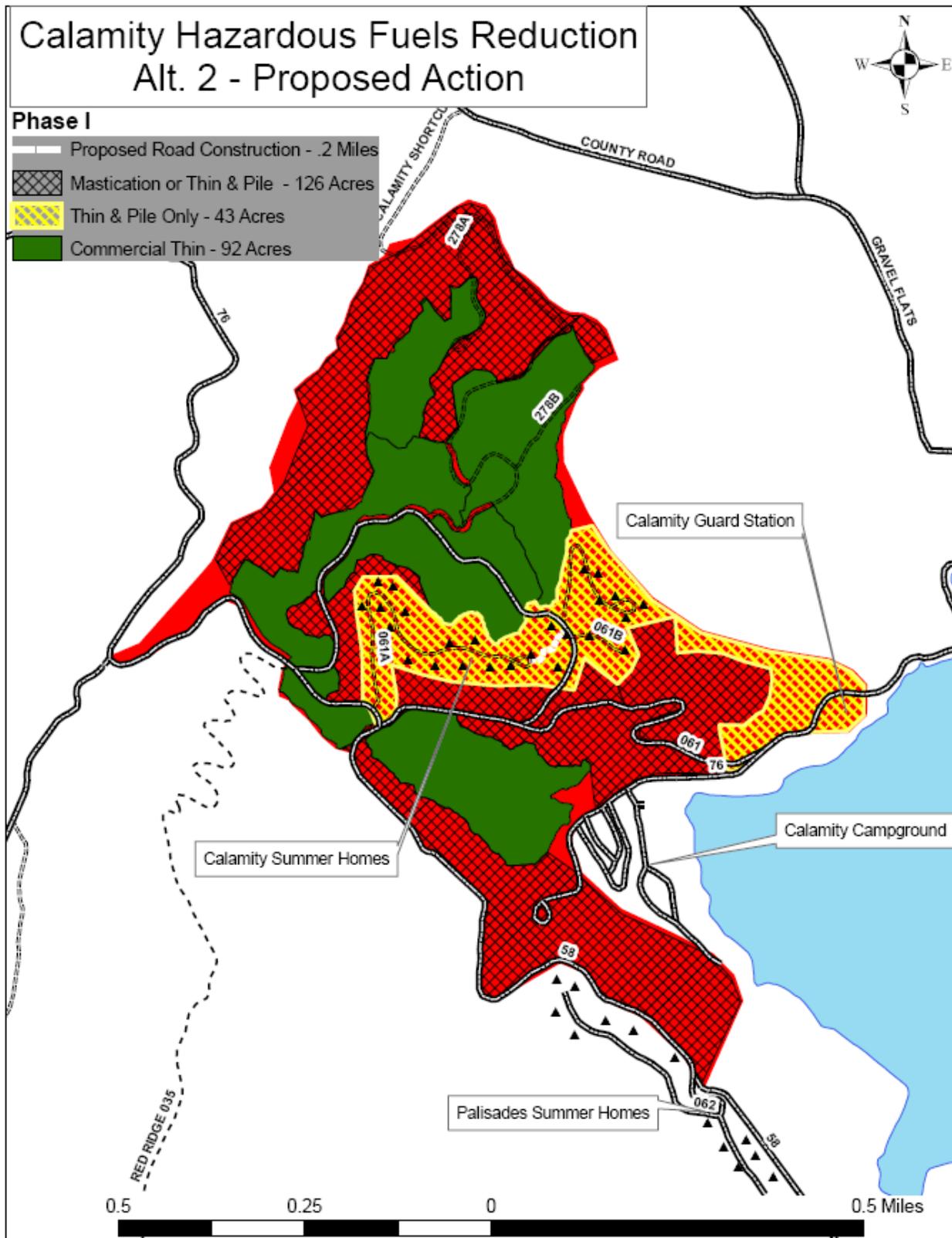
Temporary Roads, Road Closure, & Illegal ATV Access

At the present time, two temporary roads would be used for timber hauling, then decommissioned. All temporary roads would be for short term access and after the project is completed they would be decommissioned by one or more of the following methods: ripping, planting trees, placing boulders, scattering slash, and gating.

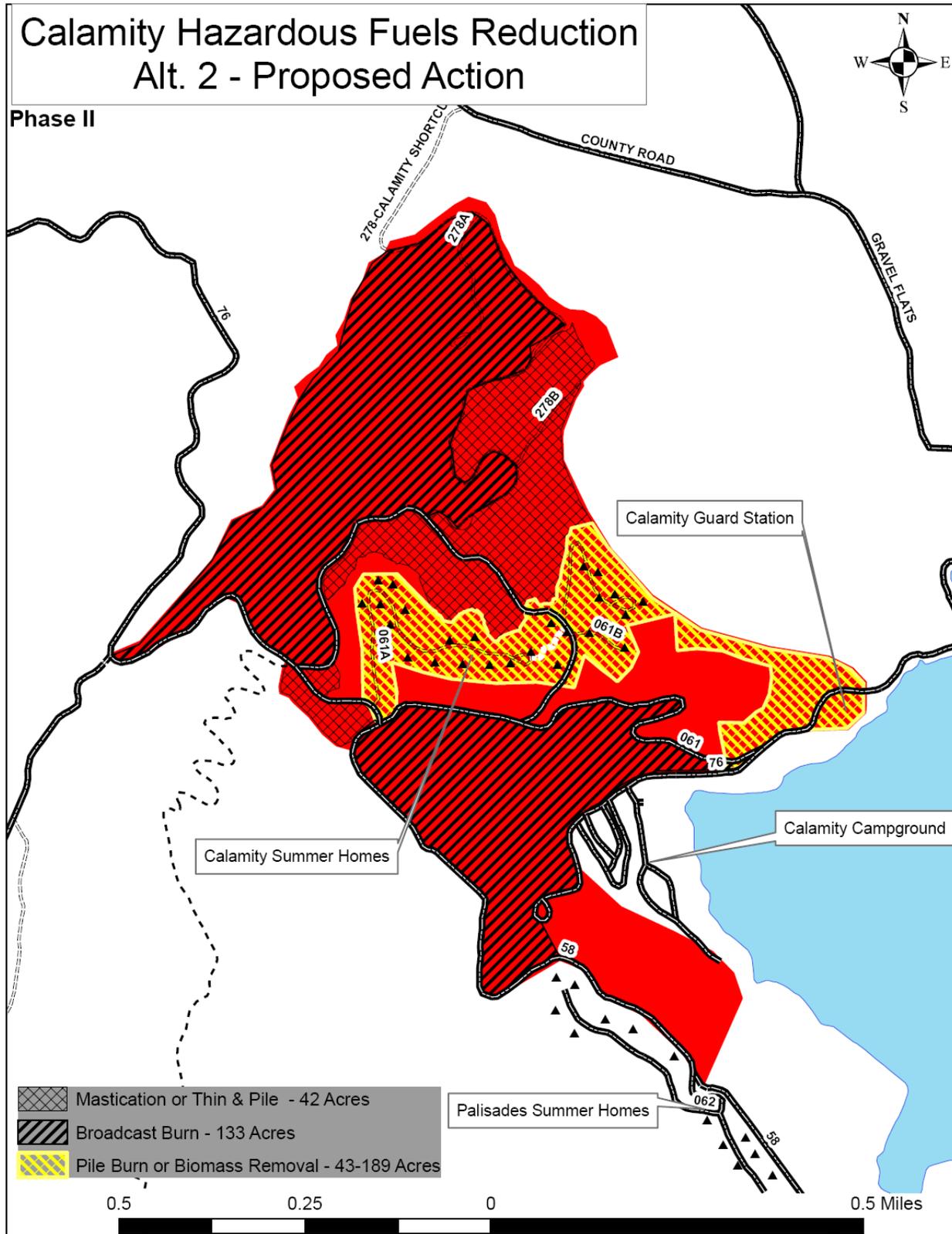
Phased Implementation of treatments

Initial treatments will be mechanical reduction of fuels including commercial thinning, seed tree cut, group selection, mastication, and hand thinning & piling. 92 Acres are designated as commercial thinning, seed tree cut, and group selection units, 43 acres as thin & pile, and an initial 126 acres as mastication or thin & pile. Initial treatments do not have to be completed throughout the entire project area prior to moving on to the second phase. For example if the initial treatments of mastication & pre-commercial thinning are completed between the campground and summer homes the area could be broadcast burned before the mastication (a Phase I treatment) is completed on the far side of the project above the 278A road. Additionally, there is some variation in Phases II & III resulting from leaving open the options to thin and pile or masticate fuels based on actual costs of implementing the treatments and pursuing opportunities to remove biomass for utilization as an alternative fuel source. Maps 2.2-2.4 display the layered treatments that will occur.

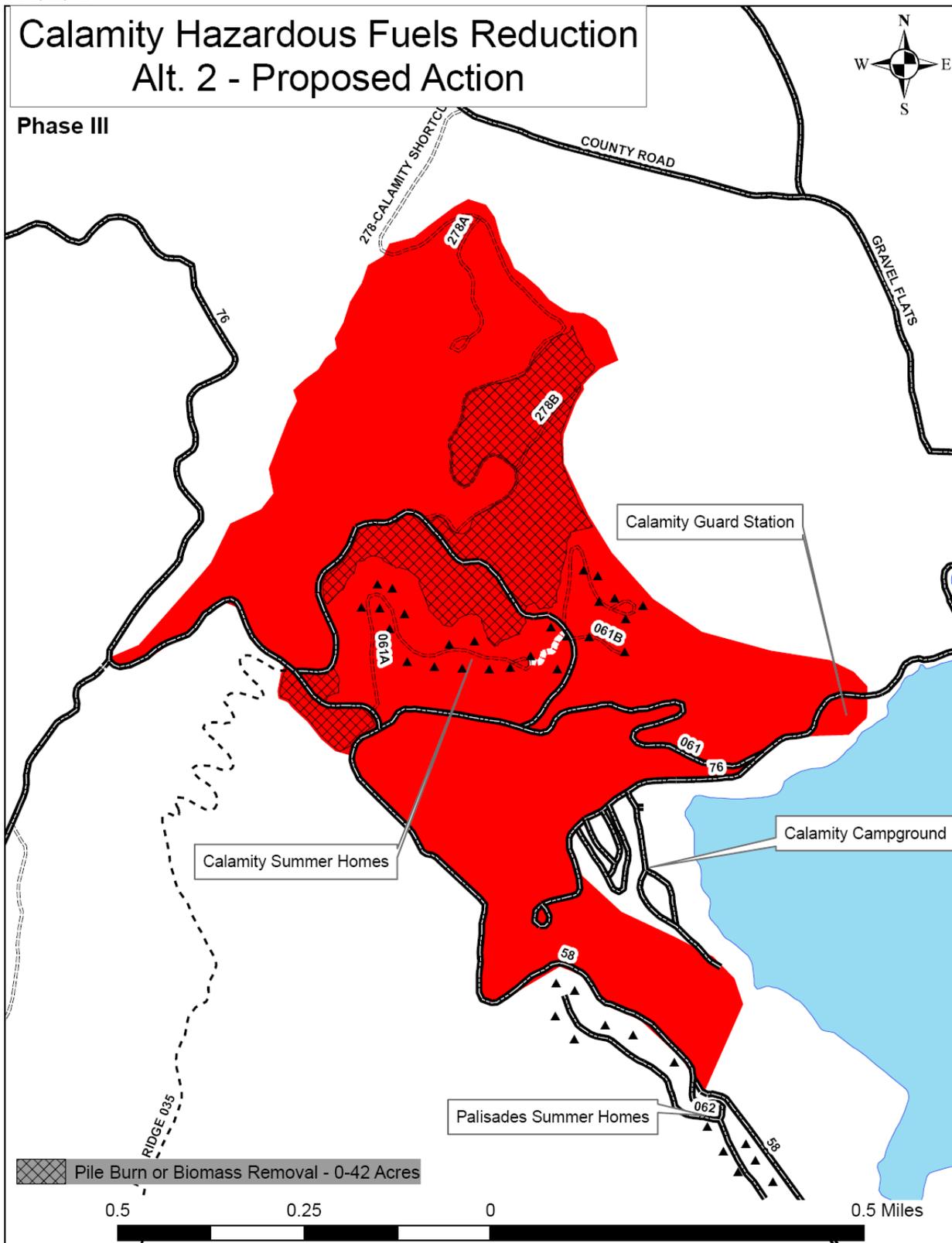
Map 2.2 Locations of Vegetation Treatments in Phase I Implementation of Alternative 2 - Proposed Action



Map 2.3 Locations of Vegetation Treatments in Phase II Implementation of Alternative 2 - Proposed Action



Map 2.4 Locations of Vegetation Treatments in Phase III Implementation of Alt. 2 - Proposed Action.



Alternative 3 -

The Hazardous Fuels Reduction Act (HFRA) requires a second action alternative be developed when the project is within the WUI but beyond 1 ½ miles from the boundary of a community at risk listed on the Federal Register. As such, the second action alternative was designed to respond to the purpose and need described in Chapter 1 as well as to address concerns brought up by internal scoping as well as by Idaho Department of Parks & Recreation. This alternative would eliminate the conflict with recreational users created by logging trucks in the Calamity Campground caused by:

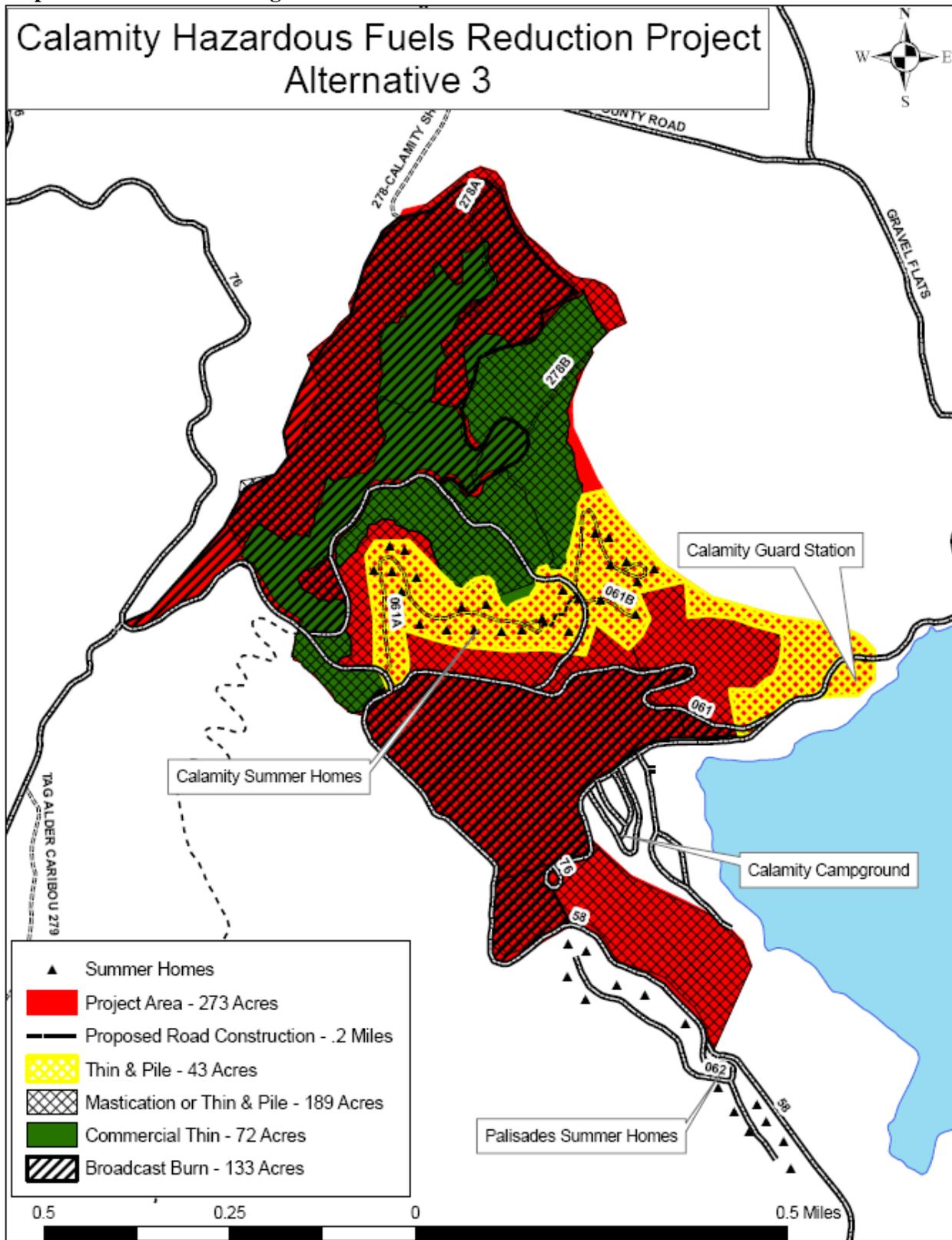
- Increased traffic due to the hauling of commercial harvest materials from the campground.
- The need for trucks to turn around either in the campground or at the Calamity Guard Station due to restrictions on large vehicles crossing the Palisades Reservoir Dam.

The actions described in Table 2.2 will move the project area toward the desired condition by mechanically treating vegetation and performing prescribed burning. Alternative 3 reduces the number of acres treated by timber harvest & increases the number of acres of mastication or thin and pile treatments.

Table 2.2

Alternative 3 – Activities		
Category	Unit of Measure	Amount
Commercial thin	acres	72
Mastication or Thin & Pile	acres	189
Thin & Pile no Mastication	acres	43
Prescribed fire		
Broadcast Burn	acres	133
Pile Burn	acres	43-232
Biomass Removal in lieu of Pile Burn	acres	43-232
Road Construction	miles	.2
Road Improvement	miles	.35

Map 2.5 Locations of All Vegetation Treatments in Alternative 3



Mechanical Vegetation Treatment Activities

Commercial Thinning - Approximately 72 acres.

Prescription will be the same as in Alternative 2, but the unit between the campground and the summer homes has been dropped.

Thin & Pile or Mastication - Approximately 189 acres.

Treatment will be the same as in Alternative 2, but the unit between the campground and the summer homes will be masticated or thinned by hand & piled instead of commercially thinned.

Thin & Pile Only - Approximately 43 acres.

Same as Alternative 2.

Prescribed Fire Treatment Activities

Broadcast Burning: 133 acres.

Same as Alternative 2.

Pile Burning or Chip & Remove of residual slash: 43-232 acres.

The additional thinning and piling of the unit between the campground & summer homes may result in an increase in pile burning or chipping & removal of slash as compared to Alternative 2.

Other Activities:

Road construction

Same as Alternative 2.

Road Improvement

Same as Alternative 2.

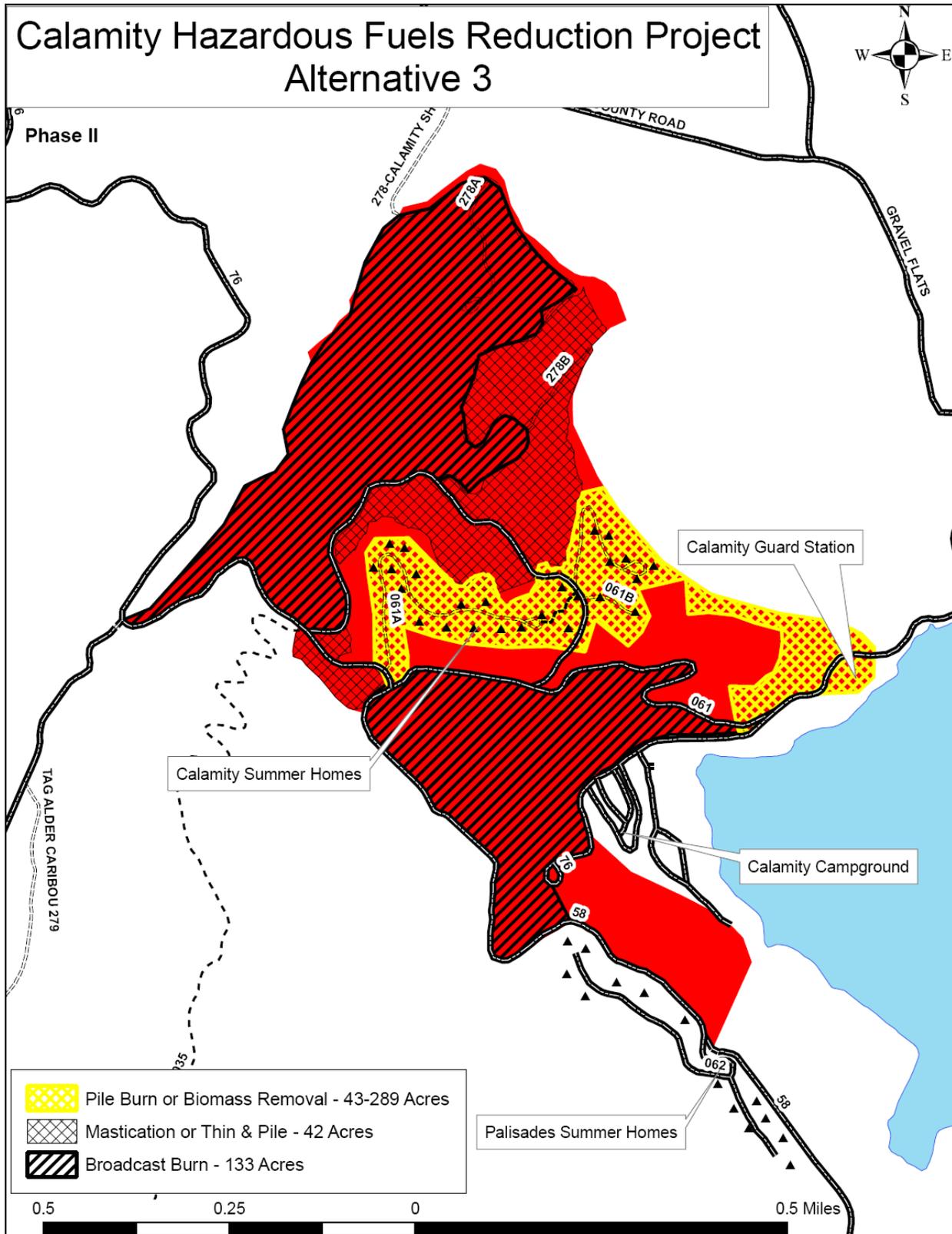
Temporary Roads, Road Closure, & Illegal ATV Access

Same as Alternative 2.

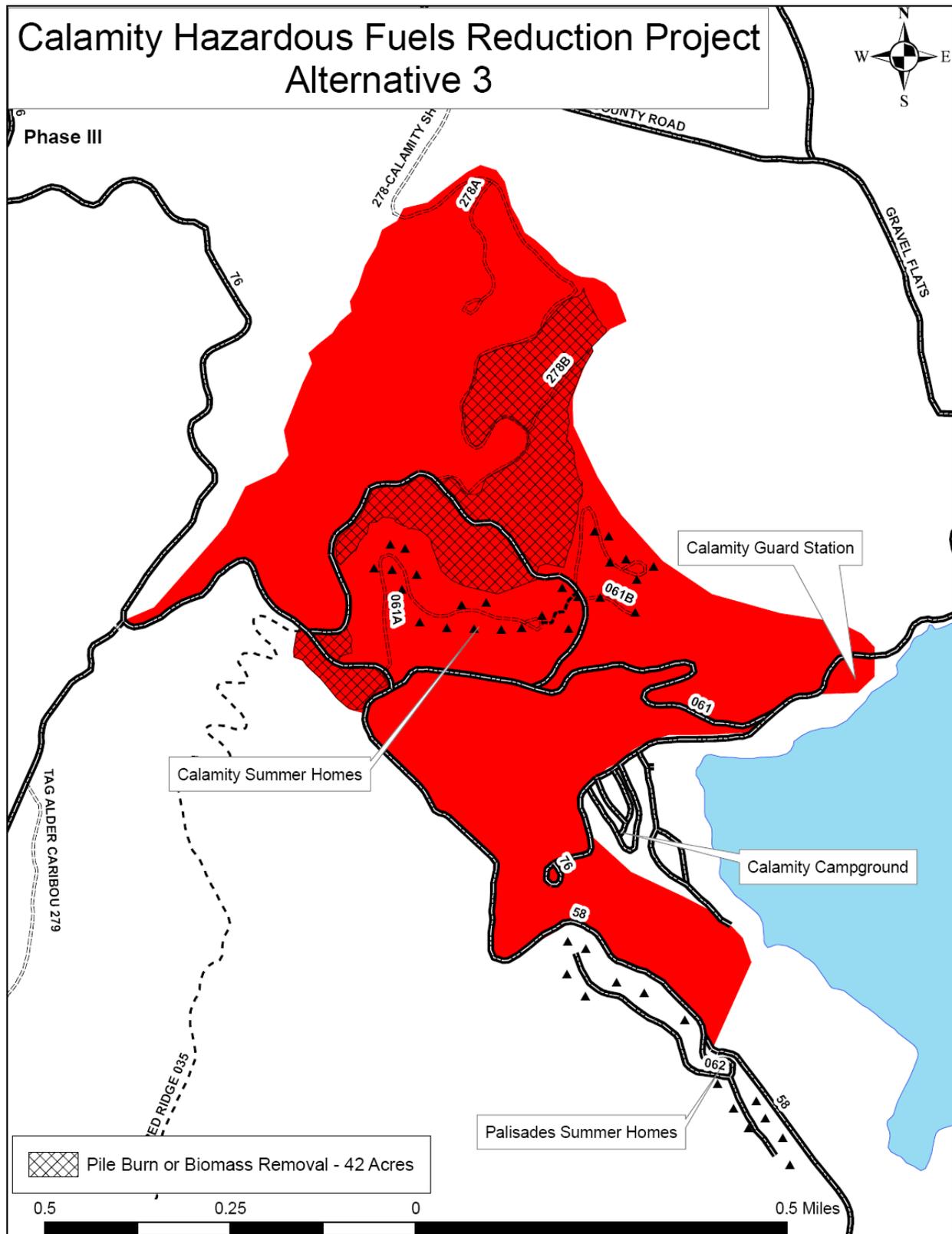
Phased implementation of treatments:

Phasing of treatments will be the same as in Alt. 2 & is displayed below in maps 2.6-2.8.

Map 2.6 Locations of Vegetation Treatments in Phase II Implementation of Alternative 3



Map 2.6 Locations of Vegetation Treatments in Phase III Implementation of Alternative 3



Design Features & Best Management Practices Associated with Alternatives 2 & 3

Design features and mitigation measures have been formulated to mitigate or reduce adverse impacts and achieve desired outcomes.

Wildlife

- Mitigation for migratory birds and other species is to restrict mechanical treatments from March 16 through July 10 each year to protect nesting/birthing activity during the spring season.
- Adhere to all standards and guides in the current Revised Targhee Forest Land Management Plan (USDA, 2008; RTFP).

Riparian and Aquatic Influence Zone (AIZ) Considerations

Table 2.3: AIZs affected by the project with boundary widths (from high water mark) by water type.

Stream Name	Water Type	AIZ Width (ft): Caribou Range Mountains Subsection
Tag Alder	Fish-bearing stream reaches	300 ft, each side
Bear Wallow Canyon	Intermittent streams and wetlands less than one acre.	100 ft, each side

AIZ direction for all activities:

- Heavy equipment operation shall not occur in the AIZ without consultation of the hydrologist or fish biologist.

AIZ direction for prescribed fire and hand operations:

- Consult the hydrologist or fish biologist during burn plan preparation to identify possible AIZ treatment areas. Minimize AIZ burning to what is needed strictly for riparian area enhancement. The Burn Boss and resource advisor shall monitor the amount and severity of fire within the AIZ during operations to ensure that excessive burn severity does not occur.

Roads, trails, and landings direction for AIZ:

- Consult hydrologist or fish biologist prior to any new construction in AIZ.
- The road identified for improvement will be evaluated for proper drainage features. The roads engineer and hydrologist will work together to ensure that construction of proper drainage occurs.
- The road proposed for improvement through the Tag Alder Creek AIZ will be evaluated for adequately sized culverts. If undersized culverts are found, the proper size culvert will be included in the road package.
- Avoid heavy-equipment operation within the AIZ, except to cross at designated points, build temporary road/stream crossings, to do restoration work, or if protected by at least one (1) foot of packed snow or 3 inches of frozen soil.
- The location and type of road/stream crossings shall be approved by the hydrologist or fish biologist prior to construction. Emphasize temporary bridges over culverts if possible.
- Table 2.4 shows the **minimum** standing trees that must be retained per one thousand (1,000) feet of stream within the Stream Protection Zone (SPZ; within 30 ft of Class II, Class II streams are headwater streams or minor drainages used by few fish).
- Operation of ground based equipment shall not be allowed within the SPZ except at approaches to stream crossings (IFPA).

- Maintain at least 80% of the natural ground cover within the AIZ. The expected re-growth and litter fall can be used in estimating this percentage if the burn occurs in the spring.

Table 2.4: Minimum standing trees per one thousand feet of stream (each side). IFPA (IDAPA 20.02.01)

Tree Diameter (DBH)	Class I Streams (stream width)	Class II Streams
	Under 10 ft wide	
3 - 7.9 inches	200	140
8-11.9 inches	42	--

Logging Systems (RFP, page III-33)

- Rutting in skid trails should not exceed six to eight inches in depth (wet condition) over more than ten percent of a designated skid trail system. No yarding operations should take place when ground conditions are wet enough that there is a risk of such rutting (G)

Soils:

- Soil and Water Conservation Practices (Region 1/Region 4 Forest Service Handbook 2509.22, 5/88) will be adhered to for this project.
- To sustain site productivity in forested communities within the project area, provide the following minimum amount of woody residue ≥ 3 inches in diameter dispersed on the site (RFP 3-7).

Table 2.5:

Woody Residue	Forest Habitat Types
5-10 tons per acre	Douglas-fir/Oregon grape, snowberry
	Douglas-fir/snowberry
	Douglas-fir/sweetcicely

- Use Idaho Forest Practices Act (IFPA) Best Management Practices (BMP's) to control erosion from timber sale areas, skid trails and access roads.
- Ensure long-term soil productivity, reduce accelerated erosion from roads and restore site productivity by applying appropriate measures such as deep ripping, water erosion control structures, covering with slash, seeding, replacing/spreading berms, and effective closure of temporary roads, primary skid trails, and landings.

Recreation

- Harvesting equipment will not be permitted on the Calamity Summer Home access roads without prior written approved by the authorized Forest Officer.
- Log trucks will not be allowed on the Calamity Campground and/or boat ramp roads from Friday through Sunday, Memorial Day though Labor Day, without written approval from the authorized Forest Officer.
- Flagmen will be required at the Calamity Guard station for turn around of loaded log trucks.
- No hauling will be permitted across the Palisades Dam, which will exceed the 20-ton load limits.
- When harvesting activities are occurring around the Calamity Campground, signs will be placed between the Campground and harvesting activities warning the public of the potential danger.
- Hauling will be restricted on Major Holidays (July 4, Labor Day) on the Snake River Road.

Proposed 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 V of the Revised 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.

Prescribed Fire and Air Quality: Monitoring will be done based on requirements defined in Interagency Prescribed Fire Handbook and Forest Service Manual, 5140. These requirements will be incorporated and defined in the Prescribed Fire Burn Plan. The minimum monitoring requirements for prescribed fire projects include weather during prescribed fire, observed fire behavior, and whether fire treatments are meeting resource objectives.

Fuels Management: Change in condition of hazardous fuels and effectiveness of fuel treatments in reducing fuels will be monitored.

Noxious Weeds: Introduction of noxious weeds or enlargement of existing weed locations resulting from project activities will be monitored.

Wildlife: Monitoring will continue to be done by the Forest Service to determine if objective's of the project are met. Monitoring of FS sensitive owls and furbearers will continue as part of the Targhee Forest Plan Priority 1 monitoring program. Other incidental monitoring will occur as needed or desired for other TES or MIS species. Currently, there are Forest Plan monitoring transects in and near the project area for sensitive owls and furbearers. Owl transects have been run from 2000 to 2007, and furbearer transect data is available from 1999 to 2007 (USDA 2008; forest data).

Soils: Soil disturbance monitoring will occur prior to closing the sale to ensure design features are adequate to meet Regional Soil standards and guidelines (FSH 2509.18, R-4 supplement r4_2509.18_2002-1) and RFP standards and guidelines in representative activity areas. R-1 soil monitoring protocol will be used.

Summary of activities proposed for each alternative.

Table 2.6

	Alt. 1	Alt. 2	Alt. 3
Commercial Thin	0	92	72
Broadcast Burn	0	133	133
Mastication or Thin & Pile	0	169	189
Thin & Pile	0	43	43
Pile Burn or Biomass Removal	0	43-212	43-232
Road Construction	0	.2	.2
Road Improvement	0	.35	.35

Alternative 1 - This alternative would continue present management within the project area. Hazardous fuels would not be reduced & the summer homes and campground would continue to be at risk due to wildfire & the taxpayer would likely bear the burden of high fire suppression costs related to any ignitions within the area.

Alternative 2 – This alternative addresses crown spacing in the summer homes & campground, surface fuel continuity, and summer home resident & firefighter escape routes in the summer home area. This alternative will result in the greatest reduction in fire behavior & crown fire activity of the three alternatives, but will also result in short term effects to recreationists that use the campground area and increased effects to recreationists that access the area west of the Snake River using the FS 061 road.

Alternative 3 – This alternative would address crown spacing in the summer home area, surface fuel continuity, and summer home resident & firefighter escape routes in the summer home area. This alternative would not result in the improved crown spacing adjacent to the campground & would be less effective at reducing potential crown fire activity in this area. However, this alternative will have the least impact on recreationists that use the campground area & access the area west of the Snake River via the FS 061 road.

Chapter 3

Affected Environment and Environmental Consequences

Chapter 3 – Affected Environment and Environmental Consequences

Introduction

This chapter provides information concerning the affected environment of the Calamity Hazardous Fuels Reduction Project Area, and potential consequences of the proposed action to that environment. All effects, including direct, indirect and cumulative effects, are disclosed. The individual discussions are organized by resource. The means by which potential adverse effects will be reduced or mitigated are described in Chapter 2 and in detailed resource reports contained in the Project Record.

The planning record for the Calamity Hazardous Fuels Reduction Project includes all project-specific information, including resource reports, biological assessments and evaluations, and other results of field investigations. The record also contains information resulting from public involvement efforts. Unless specifically stated otherwise, additional supporting information, as well as analysis assumptions and methodologies, is contained in the project planning record located at the Palisades District office.

Chapter 3 is organized and structured around key resource areas found in the following order:

- Fire and Fuels Management
- Recreation Resources
- Transportation Management
- Financial Assessment
- Botanical Resources
- Fisheries Resources
- Wildlife Resources
- Hydrologic Resources
- Soils Resources
- Balancing of Short and Long-Term Effects

Forest Plan Consistency

The proposed action is consistent with the Caribou-Targhee National Forest Plan. All applicable forest-wide and management area standards and guidelines have been incorporated into the design of the project.

Fire and Fuels Management

Introduction

Fire and fuels will be analyzed to display how the proposed action accomplishes the purpose and need stated for this project. The affected environment description will describe how the current situation presents a threat to life and property in the Wildland Urban Interface (WUI) around the Calamity Summer Homes. The analysis of effects of the proposed action will focus on demonstrating the achievement of the project purpose and objectives as described in Chapter one.

Vegetation current conditions and response to management activities to reduce fuels were modeled using the NEXUS model (Scott, 2004, Project Record). The NEXUS model is a fire behavior model that links surface and crown fire models using stand conditions and weather parameters to predict surface and crown fire behavior.

Affected Environment

Values at risk & fire ignitions

Currently 25 privately owned summer home cabins exist as authorized under special use permit on Forest Service Administered lands within the Calamity Summer Home Site, there is one administrative residence at the lower end of the project area and multiple improvements (including picnic tables, pumphouse for a water well, & powerlines) are present in the Calamity Campground. Ignition probability within the project area is higher than in the surrounding forest due to a number of factors including: road access throughout the project which provides for potential ignitions from cigarette butts thrown from vehicles and hot exhaust components; high recreational use in the project area which provides for potential ignitions from improperly extinguished campfires; and of course fires ignited naturally by lightning. Over the past 35 years 174 fires have started within a 10 mile radius of the project area, 121 were caused by lightning and two of these grew to a size greater than 1,000 acres.

Current Fuel Hazard and Fire Behavior

The current vegetation characteristics are over stocked stands of Douglas fir, lodgepole pine, and aspen, with a small amount of intermixed subalpine fir that have vertical and horizontal fuelbed continuity which allow surface fires to move through the ladder fuels into the overstory canopy of the larger tree component. The horizontal and vertical fuel loading and continuity are well above historic levels (see Figure 3.1), Figure 3.2 shows typical current conditions. Fine fuels (0-3" category) are the primary component to fire spread, this component of the overall fuel bed is reduced most effectively by prescribed fire and its reduction is one of the objectives of the project. Photo series and ocular estimates were used to determine fuel loading (Dickinson, 2007). On the 273 acre analysis area the current fine fuel loading is 3-6.75 tons/acre in the 0-3" size class.

The result of high surface fuel loadings combined with continuous crowns & ladder fuels is a much higher risk of crown fire & surface fires with flamelengths of 5-10'. The current fuel conditions affect suppression resources by increasing wildland fire's resistance to control. This increases the risk to firefighter safety and hampers the success of initial attack forces.

Figure 3.1

Calamity Special Use Summer Home Area - 1969
(Photo by Rollo Brunson, District Ranger)

Calamity Special Use Summer Home Area – 2003 (Photo by
Bud Alford, District Wildlife Biologist)

Figure 3.2

This photograph is representative of pre-treatment conditions displayed in the NEXUS run in figure 3.3 and 3.4. Notice the understory ladder fuels and the horizontal and vertical fuelbed continuity. Fire has the ability to move readily into the crowns of the trees.

Environmental Consequences

Fire Behavior and Fuels Hazard

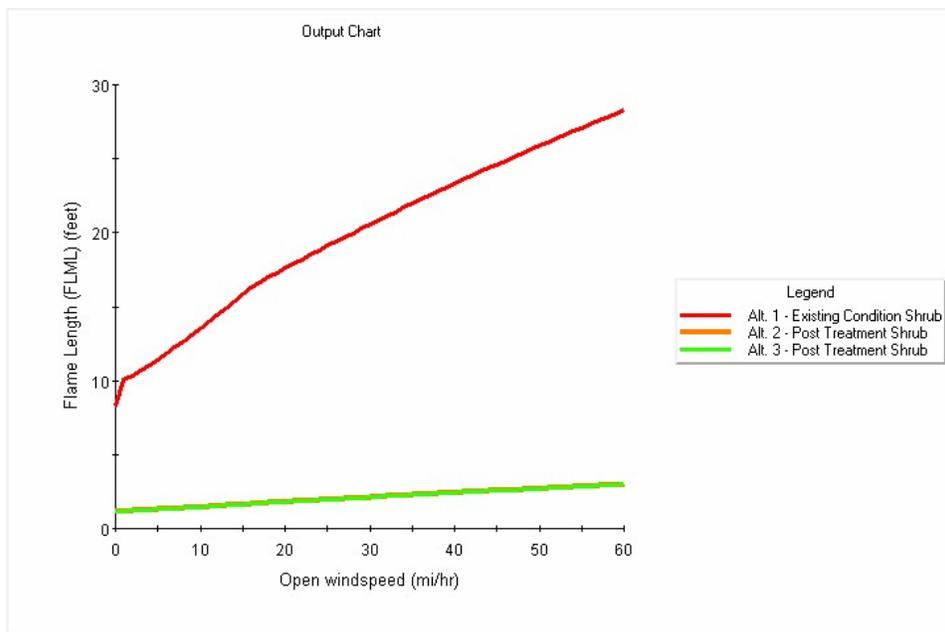
The action alternatives will reduce the hazard of wildfire by altering the current fuel conditions. The planned management activities will have a dramatic effect on fire behavior within the analysis area. “The most effective strategy for reducing crown fire occurrence and severity is to (1) reduce surface fuels, (2)

increase height to live crown,(3) reduce canopy bulk density, and (4) reduce continuity of the forest canopy.” (Graham et al 2004) Most of the current stand densities are between 100 and 600 trees per acre with surface dead and down fuel loads between 3.0 and 6.75 tons per acre in the 0-3” category (NFES 1395) (GTR-INT-97). Managed stand densities will be roughly 80-260 trees per acre with surface fuel loads of .75-3.75 tons per acre in the 0 to 3” size class (NFES 1395) (PSW-56) (GTR-INT-97). With stand densities significantly lower and increased species composition of fire resilient aspen the analysis area will have decreased wildfire hazard and can be maintained with minimal future mechanical treatments.

The NEXUS 2.0 (Scott, 2004) fire behavior model was used to model surface and crown fire behavior with the current fuels condition and post treatment stand conditions. Figures 3.3 & 3.4 display the results of such modeling on representative stands.

Effects Common to Both Alternatives:

Figure 3.3 The graph below displays the NEXUS modeling of Flame lengths in shrub fuel models pre & post treatment.

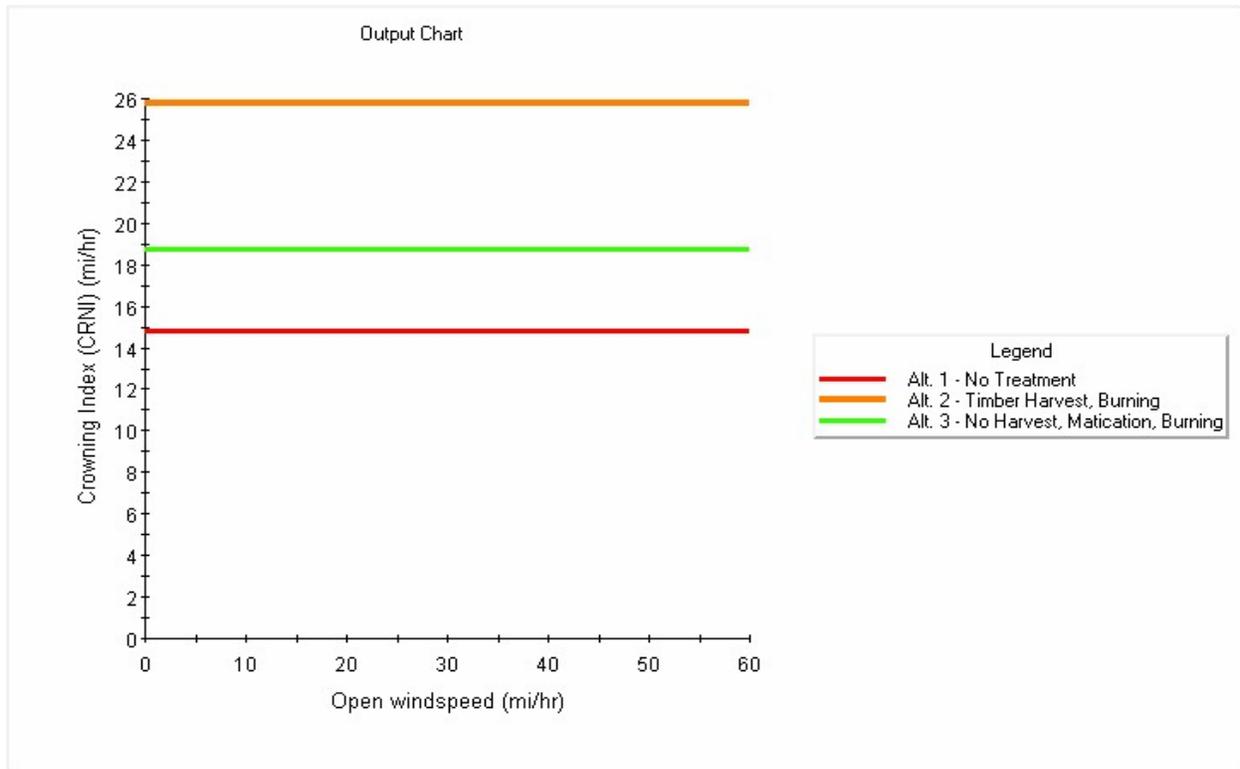


Action alternatives 2 & 3 will implement treatment on approximately 273 acres to reduce canopy bulk density, raise the canopy base height, and reduce the overall fuelbed continuity.

The pre-commercial thin & mastication are designed to target the middle part of the fuelbed strata. These treatments will target subalpine fir, Douglas fir, lodgepole pine less than 10 inches dbh & brush. This treatment will raise canopy base height, reduce canopy bulk density, and increase canopy spacing by removing approximately 30% of the understory layer or ladder fuels reducing fires ability to climb into the upper canopy. The prescribed fire treatment will be applied when appropriate to areas that have been mechanically treated. This treatment will reduce the fuels in the lower fuelbed strata. The reduction in ground, surface, and ladder fuels by prescribed fire will slow the rate of spread, reduce fire intensity, and reduce the flame length.

Effects of action alternative 2 & portions of 3 that include commercial thinning.

Figure 3.4 The graph below displays the Crowning Index or the free air wind speed at which a wildfire would be expected to move from a surface fire to a crown fire.



The commercial thin treatment is designed to target sub-alpine fir, smaller diameter Douglas fir and lodgepole to remove trees to increase canopy spacing and reduce crown bulk density. This treatment will have an affect on fire behavior by decreasing the upper fuelbed continuity, which will reduce fires ability to move through the upper canopy layer. These treatments will effectively reduce the risk of stand replacement crown fire adjacent to the Calamity Summer Homes. The proposed treatments of commercial and pre-commercial thinning of mixed aged stands will retain existing larger diameter Douglas fir that are fire resilient and increase quantities of less flammable aspen.

Figure 3.2 represents pre-treatment conditions in the Calamity project area. Due to the dense canopy and ladder fuel component, the flame lengths are higher with less wind than the post treatment areas. The pre-treatment fire behavior would be much more difficult to suppress because the flame length increases rapidly with a small increase in wind. The flame length is in excess of 4 feet except at very low wind speeds in timber, which would eliminate direct attack with hand tools as a successful firefighting tactic.

Post-treatment crowning index represents fire behavior within the project area with and without commercial thinning followed by pre-commercial thinning, and biomass removal. The results from post treatment represent a surface fire through the stand until up to a 26 mph wind in the areas with commercial harvest. The modeled result of the treatments indicate that flame lengths will remain less than four feet up to 30 mph wind speeds in the brush (discounting any timber overstory or transition to the crowns). The resulting post-treatment fire behavior that can be direct attacked by firefighters will increase firefighter success, safety and reduce hazard from fire to the Calamity Summer Homes.

Table 3.1 Principles of fire-resilient forest (modified from Peterson et al.)

Objective	Fire Effect	Advantage	Concern
<i>Reduce Surface Fuels</i>	Reduces potential flame length	Less resistance to control	Surface disturbance less with fire than mechanical techniques
<i>Increase Canopy Base Height</i>	Requires longer flame length to initiate torching	Less torching	Opens understory, may increase surface wind
<i>Decrease Crown Density</i>	Less probable independent crown fire	Reduced crown fire potential	Surface wind may increase, surface fuels may be drier
<i>Retain Larger Trees</i>	Thicker bark, taller crowns, higher canopy base height	Increases tree survivability	Removing smaller trees is economically less profitable

Cumulative Effects

The analysis area for cumulative effects will be the area around Calamity that will have the most effect on fire behavior. This will include the area surrounding the Calamity project from Bear Creek to Deer Creek between the Snake River & Red Ridge above.

Past, Present, Ongoing, and Future Projects

One other project that has been completed within this area that affected fire behavior. The Camp Little Lemhi project accomplished a total of 73 acres of treatment. This project was designed to reduce fire behavior around Camp Little Lemhi and is considered to be in a “maintenance” condition and will need future hand thinning treatments to maintain the current conditions. Due to the limited size of the treatment at Camp Little Lemhi there are no cumulative effects to fire behavior in the Calamity project area or the cumulative effects area. Changes in fire behavior can be observed at the implementation site but are not evident beyond the areas treated.

The Calamity Hazardous Fuels Reduction Project will likely begin implementation in 2008 and will treat roughly 273 of WUI to the surrounding the Calamity Summer Homes. The proposed treatments should be completed by 2013.

Maintenance treatments immediately adjacent (within the Home Ignition Zone, Cohen, 2000) to the summer homes will be necessary on an annual basis (mowing of grass and trimming of brush) and are expected to be completed by the special use permittees under their permits. The area beyond the home ignition zone (within the Community Protection Zone, Butler & Cohen, 1998) will need to be maintained on a 5-35 year rotation. On this schedule, treatments will not need to be as extensive, mastication of 15-20% of the project area every 5 years would maintain average desired brush heights throughout the project area. Selective non-commercial thinning of trees will need to be completed on a 15-35 year rotation to ensure that desired future generations of forested vegetation are maintained to replace existing “relic” trees while maintaining low fire hazard conditions.

Project Record

This Environmental Analysis hereby incorporates by reference the Fuels Specialist Report in the Project Record (40 CFR 1502.21). The Fuels Specialist Report contains the detailed data, methodologies, analysis, references, and other technical documentation used in the assessment.

Recreation Resources

Introduction

This section discusses the existing conditions of the recreation resources and activities, as well as the effects the proposed action may have on those resources. The analysis area for direct, indirect and cumulative recreation effects is the project area.

Affected Environment

Trails: There are currently no system trails within the Calamity project boundary. However, upon completion of the project Forest Road 278 will be closed.

Campgrounds: The Calamity Campground is situated along the Snake River drainage at the north end of Palisades Reservoir. Area sits on a northern exposure with lodgepole pine and conifer trees. Restrooms are provided. There is a large boat ramp and parking facility. Wildlife viewing, lake fishing, sightseeing and photography are popular activities. All types of boating on the lake are allowed. A full-time campground host is located on site.

Winter Recreation: FS Road 76, also known as the River Road is a primary winter access point for snowmobilers.

Other Recreation Activities: 25 summer homes are present in the Calamity Special Use Permit Area. The special use permit area was established to encourage the use and enjoyment of the National Forests by the public for the purpose of recreation.

Environmental Consequences

No Action Alternative:

Trails: No change from current status, conflicts between vehicles & ATV users will continue on the FS 278 Road.

Winter Recreation: No change from current status.

Other Recreation Opportunities: Summer home permittees and campground visitors will not see any changes in use of summer home or campground roads.

Campground: No change from current status.

Indirect: Homeowners and forest campground concessionaires will assume more responsibility for creating defensible space around their summer homes, and be exposed to continued risk of evacuation due to wildfire hazard in the surrounding area.

Effects Common to Both Action Alternatives:

Trails: This project will result in reduced conflicts between vehicle traffic & ATV users on the FS 278 Road.

Winter Recreation: Recreation opportunities may be altered for one winter if the units are winter logged.

Other Recreation Activities: Summer home permittees will temporarily be impacted by increased noise and activity near their lots. There will be an increase in vehicle traffic on summer home roads until the project is completed.

Campground: Users will temporarily be impacted by increased noise adjacent to the campground from equipment. Impacts may be decreased by working Monday-Thursday adjacent to the campground and moving elsewhere for any weekend work when the campground is occupied.

Indirect Affect: Treatment of fuels in and around the summer homes & campground may reduce the need to evacuate residents & recreationists in the event of a wildfire or may shorten the period when an evacuation or area closure due to a wildfire would be necessary.

Alternative 2 Effects:

Campgrounds: This alternative may result in conflicts with recreationists attempting to access the campground while commercial harvest activities are occurring. Recreational use after labor day decreases dramatically and would be the most opportune time to utilize heavy equipment adjacent to the campground. However, a temporary closure of the campground may be necessary after labor day to reduce conflicts between recreationists and heavy equipment.

Alternative 3 Effects:

Campground: Increased noise due to mastication of brush will be the primary impact on recreationists under this alternative.

Indirect Affect: Crown spacing will not be increased as much under this alternative which means that fuels treatments will be less effective than in alternative 2, potentially prolonging evacuations & campground closures due to a wildfire.

Cumulative Effects

The cumulative effects will be the same as the direct and indirect effects as there are not past or planned actions that will contribute to cumulative effects.

Transportation Management

Affected Environment

Table 3.2 Status of System Roads/Trails Existing and Planned

Road Name and Number	Length (Miles)	Jurisdiction	Open, Proposed Construction	Surface	Maintenance Level	Service Level
Snake River – Calamity 40076	15.71 0.88	County County	O O	Aggregate Asphalt	County County	NA NA
Calamity GS 40063	0.02	FS	O	Aggregate	3	C
Calamity CG 40241	0.20 0.32	FS FS	O O	Asphalt Aggregate	4 4	A A
Calamity CG Loop A, B, C 40241-A, B, C	0.08, 0.29, 0.23	FS	O	Aggregate	4	A
Calamity CG Boat Ramp 40241-D	0.17	FS	O	Aggregate	4	A
Calamity CG Day Use 40214-E	0.11	FS	O	Aggregate	4	A
Calamity CG Water System 40242	0.20	FS	O	Native	2	D
Bear Creek – Elk Jensen 40058	5.04 12.51	County FS	O O	Aggregate Native	County 2	NA D
Calamity Summer Home Area 40061	0.44	County	O	Aggregate	County	NA
Calamity SH A 40061A	0.45	County	O	Aggregate	County	NA
Calamity SH A Extension 40061AA (fire access)	0.10	County	Proposed Construction	Aggregate	County	NA
Calamity SH B, C 40061B, C	0.07, 0.29	County	O	Aggregate	County	NA
Calamity Shortcut 40278	1.55	FS	O	Native	2	D
Gravel Flats 40277	1.42 1.43	BOR County	O O	Aggregate Aggregate	BOR County	NA NA
Tag Alder 40279	1.10	FS	O	Native	2	D
Trail Name and Number	Length (Miles)	System or Non-System	Motorized or Non-Motorized	Surface	Maintenance Level	Service Level
Russell Creek 4037	3.91	S	Motorized	Native	NA	NA
Red Ridge 4035	10.43	S	Motorized	Native	NA	NA
Tag Alder 4024	1.20	S	Motorized	Native	NA	NA

O = Open to motorized use during the snow-free season. Over snow vehicles permitted Thanksgiving - June 1.

Proposed Construction = Construct a new low level system road.

Maintenance Level 2 – High clearance vehicles.

Maintenance Level 3 – Passenger vehicles-surface not smooth.

Traffic Service Level A – Free flowing, mixed traffic; stable, smooth surface; provides safe service to all traffic.

Traffic Service Level C – Interrupted traffic flow, limited passing facilities, may not accommodate some vehicles.

Traffic Service Level D – Traffic flow is slow and may be blocked by management activities. Two-way traffic is difficult, backing may be required.

Table 3.3 Project-related Need/Activity

<i>Road/Trail Number</i>	<i>Need for the Road/Trail Relative to Calamity Hazardous Fuels Reduction Analysis</i>	<i>Road/Trail Activity Relative to Calamity Hazardous Fuels Reduction Analysis</i>
Snake River – Calamity 40076	Potential Haul Route for Timber Removal	System Road Maintenance (County)
Calamity GS 40063	Potential Turnaround for Timber Removal	System Road Maintenance
Calamity CG 40241	Potential Haul Route for Timber Removal	System Road Maintenance
Calamity CG Loop B 40241-B	Potential Haul Route for Timber Removal	System Road Maintenance
Calamity CG Loop C 40241-C	Potential Haul Route for Timber Removal	System Road Maintenance
Calamity CG Water System 40242	Potential Skid Trail for Timber Removal	System Road Maintenance
Calamity Shortcut 40278	Potential Haul Route for Timber Removal	System Road Maintenance
Gravel Flats 40277	Potential Haul Route for Timber Removal	System Road Maintenance (County)
Calamity Shortcut A 40278A	Potential Haul Route for Timber Removal	Temporary Road Use - Decommission
Calamity Shortcut B 40278B	Potential Haul Route for Timber Removal	Temporary Road Use - Decommission
Calamity SH A Extension 40061AA (fire access)	Proposed Fire Protection Access for Calamity Summer Home Residents	Proposed Construction of a Fire Protection Access for Calamity Summer Home Residents

Table 3.3 summarizes the need and activity associated with each road/trail that may be affected by the Calamity Hazardous Fuels Reduction project.

Table 3.4 Temporary Road Recommendations

Road Number	Recommended Actions	Cost Estimate
Calamity Shortcut A 40278A	Prior to use, clear brush for approximately 0.14 miles along roadway. Following use, decommission approximately 0.14 miles to provide adequate drainage (water bars every 500 feet, outslope), rip to a minimum depth of 36 inches, scatter slash when available, place rocks at the intersection.	\$1,967
Calamity Shortcut B 40278B	Prior to use, scarify/shape roadway for approximately 0.21 miles. Following use, decommission approximately 0.21 miles to provide adequate drainage (water bars every 500 feet), rip to a minimum depth of 36 inches and scatter slash when available.	\$858
ATV Trail A	Decommission approximately 0.08 miles (first creek crossing) to provide adequate drainage (water bars every 500 feet), rip to a minimum depth of 36 inches and place rocks (6) at intersection.	\$896
ATV Trail B	Decommission approximately 0.66 miles to provide adequate drainage (water bars every 500 feet), rip to a minimum depth of 36 inches and place rocks (6) at intersection.	\$2,138
Calamity SH 40061AAA	Decommission approximately 0.14 miles to provide adequate drainage (water bars every 500 feet), rip to a minimum depth of 36 inches and plant trees at two intersections.	\$1,156
TOTAL ESTIMATED TEMPORARY ROAD COSTS:		\$7,015

Environmental Consequences

Analysis indicates that implementation of Alternatives 2 or 3 will improve motorized access for administrative and Summer Home residents, and maintain a safe, environmentally sound travel network that is responsive to the Forest needs. Proposed road improvement activities such as construction of dips, additional clearing along the shoulders, and general maintenance of roads used in hauling operations will improve drivability and reduce maintenance needs in the long-term. Though this process is costly at this time, it will eventually provide a Forest Transportation System that is affordable and easier to manage and maintain.

Cumulative effects

The cumulative effects analysis area is the same as that used for direct and indirect effects. There are no other planned changes in the transportation system. The cumulative effects will be the same as that for direct and indirect effects discussed under the proposed action.

Project Record

This Environmental Analysis hereby incorporates by reference the Transportation Report and Calamity Hazardous Fuels Reduction Roads Analysis in the Project Record (40 CFR 1502.21). These reports contain the detailed data, methodologies, analysis, references, and other technical documentation used in the assessment

Financial Assessment

Introduction

This section will assess potential costs by treatment method (i.e., underburning, pre-commercial thinning, etc.) and revenues generated from commodity values by the proposed action. Non-commodity values are difficult to assess and have not been included. The primary indicators used for the financial assessment are: Revenue generated by the Proposed Action (\$), implementation costs (\$), and estimated potential wildfire suppression costs (\$).

Environmental Consequences

Table 3.5 Financial Assessment

Economic Indicator	Alt. 1	Alt. 2	Alt. 3
Estimated net volume (Mbf)	0	1040	789
Gross Revenue (Appraised Value)	0	+\$5,889	+\$4,470
Projected NEPA costs	-\$60,000	-\$60,000	-60,000
Projected contract preparation and admin. costs	0	-\$85,000	-\$85,000
Estimated road decommissioning costs	0	-\$7,000	-\$7,000
Estimated thin/pile/mastication costs	0	-\$67,900 (212 acres)	-\$73,900 (232 acres)
Estimated prescribed burn costs: includes underburning, broadcast, handpile and machine pile burning (approximately 176 acres)	0	-\$13,300	-\$13,300
Net Revenue (Gross Revenue minus project costs)	-\$60,000	-\$227,311	-\$234,730
Potential Wildfire Suppression Costs	-\$3,000 (successful initial attack) to -\$1.2 Million (80 Acre Spencer Cyn. Wildfire, 2007)	-\$3,000 (successful initial attack) to -\$272,000 (3 day wildfire including mop-up & rehabilitation)	-\$3,000 (successful initial attack) to -\$272,000 (3 day wildfire including mop-up & rehabilitation)
Total Cost:	-\$63,000 to -\$1.3 Million	-\$230,311 to -\$457,622	-\$237,730 to -\$506,730

Projected wildfire suppression costs are expected to be low based on the assumptions that an ignition (lightning strike or human caused) would result in a surface fire. These conditions would allow for the fire to be suppressed with minimal acres lost and high suppression success.

Wildfire suppression costs in the treated project area would be substantially less than with the current and future vegetation conditions. The treated project area would have reduced “resistance to control” for firefighters giving them a better opportunity to contain a fire in the initial attack phase. The costs associated with initial attack fires are in the thousands of dollars, as opposed to extended attack fires which can easily run into the millions of dollars. Future costs associated with wildfire suppression after treatment would be greatly reduced in the project area and potential losses from property damage on private lands would be minimized.

Cumulative Effects

There are no past, ongoing, or foreseeable future projects that affect the financial assessment or revenue generated by any of the alternatives. The potential influence of other projects currently being analyzed on adjacent districts or forests are unpredictable at this time. Therefore no cumulative effects are anticipated on the financial aspects or net revenue/expenditure ratios of this project.

Botanical Resources

Threatened or Endangered Species: Ute ladies'-tresses (*Spiranthes diluvialis*)

Ute ladies'-tresses is a perennial, terrestrial orchid with stems 20 to 50 centimeters (8 to 20 inches) tall, arising from tuberously thickened roots. The orchid is currently known from Colorado, Idaho, Montana, Nebraska, Utah, Washington and Wyoming. In Idaho it is currently known occur in riparian and wetland habitat associated with the South Fork of the Snake floodplain and in an area north of St. Anthony referred to as Chester Wetlands. Additionally a new population was found in 2005 along the Snake River on the Shoshone-Bannock Indian Reservation.

In habitat throughout the orchid's range, Ute ladies'-tresses is endemic to mesic or wet meadows and riparian/wetland habitats in relatively low elevations near spring, seeps, lakes, or perennial streams (Moseley 1998). Soils may be inundated early in the growing season, normally becoming drier but retaining subsurface moisture through the season. The elevation of known orchid occurrences range from approximately 700 to 6,800 feet. (USFWS 2002)

Generally, this species occurs below the coniferous zone in areas where the vegetation is relatively open (e.g. grass and forb-dominated sites), but some populations are found in riparian woodlands (such as cottonwoods) in Colorado, Utah, and Idaho and in riparian shrub (e.g. willow thickets) communities (Moseley 1998). Soils range from fine silt/sand to gravel and cobbles, sometimes highly organic or peaty soils. In some areas, the wetland habitat and soils that support this species are moderately to strongly alkaline (USFWS 2002).

Habitat At This Location: The habitat to be treated is a mixed conifer and aspen forest type with mountain brush. Currently high fuel loads in the forested portion persist across the proposed area. Mountain pine beetle is active resulting in numerous dead and dying trees which add to the already high fuel load. Down and dead woody material average over 20 ton per acre. Fuel loads of 20 tons per acre and greater are considered high for this fuel type.

The main vegetation in the forested area includes mixed conifer of Douglas fir, lodgepole pine and subalpine fir as well as quaking aspen. The small amount of non-forested habitat includes grass, forbs, sagebrush, bitterbrush, snowberry, various mountain brush, and few riparian shrubs. There is no riparian habitat within the project, but Coyote Hollow and Bear Wallow Canyon are adjacent.

Effects Analysis: No Effect.

Sensitive Species:

The Calamity Summer Homes Hazardous Fuels Reduction Project will have "no impact" on Region 4 sensitive plant species listed for the Targhee National Forest.

Old Growth & Late Seral Conditions:

Old growth and land seral conditions have been assessed by principle watershed and no contiguous blocks of 300 acres in size or greater have been identified within the project boundary. Two individual stands within the project area meet late seral conditions & the large tree component of these stands will not be altered by project activities (Old Growth/Late Seral Blocks Map included in project record).

Project Record

This Environmental Analysis hereby incorporates by reference the Botanist's Specialist Report in the Project Record (40 CFR 1502.21). This report contains the detailed data, methodologies, analysis, references, and other technical documentation used in the assessment.

Fisheries Resources

Species Considered in this Analysis

Yellowstone cutthroat trout (*Oncorhynchus clarki bouvieri*)

Affected Environment

Intensive surveys for Yellowstone cutthroat trout distribution have been conducted on the Caribou-Targhee National Forest since 1997. The subspecies appear to be distributed throughout most of the Forest, but populations in various streams or stream segments vary in strength. While some populations are threatened by competition and hybridizing with nonnative species, others appear to be thriving in isolated streams or stream reaches. Some populations have been replaced by introduced nonnative fish species. Genetic interactions between existing Yellowstone cutthroat trout populations have diminished from historic conditions because of a decrease in connectivity.

No Yellowstone cutthroat trout or stream habitat exist in the project area. Yellowstone cutthroat trout exist in surrounding waters such as Palisades Reservoir (to the east), Bear Creek (to the south), and South Fork Snake River (to the north), but do not occur in the immediate project area. The waters surrounding the project area are considered important Yellowstone cutthroat trout stronghold streams and are part of an overall concentration of Yellowstone cutthroat trout stronghold streams that center around the South Fork Snake River. Bear Creek is considered near pristine habitat.

Environmental Consequences

No direct or indirect effects are expected from this project because streams will not be affected and no runoff from disturbed soil is expected to reach habitat. The roads for hauling have excellent surfacing and are not a significant source of sediment to perennial waters, even considering increased use with project implementation.

Cumulative Effects

No direct effects are expected from this project, so no cumulative effects are expected.

ESA Determinations

The Calamity Hazardous Fuels Reduction Project will have no impact upon Yellowstone cutthroat trout or their habitat.

Project Record

This Environmental Analysis hereby incorporates by reference the Fishery's Specialist Report in the Project Record (40 CFR 1502.21). This report contains the detailed data, methodologies, analysis, references, and other technical documentation used in the assessment.

Wildlife Resources

Introduction

This section discusses the existing condition of the wildlife resource, as well as the effects of the proposed action on those resources. The discussion will focus on three general areas of wildlife resources; threatened, endangered, or proposed species under the Endangered Species Act; species designated as sensitive by the Regional Forester, migratory birds, and management indicator species identified in the Forest Plan (Alford 2008; Biol. Assess/ Eval.).

Threatened, Endangered, or Proposed Species under the Endangered Species Act

Canada Lynx (*Lynx canadensis*)

LAU and Habitat Status: Currently, there are no Lynx Analysis Units (LAUs) overlapping the proposed project 273 acre proposed area. The project area is within the Caribou Subsection and has been mapped as “linkage” habitat (RTFP 1997 and USDA 2005; CTNF lynx maps) and is mostly secondary forest habitat for lynx along with open brush/ shrub-steppe. Primary forested habitat is present in the Caribou Subsection linkage zone, but is limited to smaller acreages (USDA 2005; LAU map; Wildlife Specialist Report). The closest adjacent LAUs to the project area are in the Big Holes Subsection about 5 miles to the east. The project area is not considered suitable for lynx breeding and denning, but traveling lynx may occur.

Forest Data: There are no confirmed lynx reports for the project area. One possible was reported on a deck of a summer home in the spring of 2000 and a video was taken. Alford (2000) viewed the video and determined it to be a light colored bobcat which looked very much like a lynx. The tail marking was that of a bobcat. Bobcat tracks had also been picked up on the Forest Plan Calamity snow tracking transect about the same time by Alford and Kerner (USDA 2008 and prior; FS data). Lynx have been reported in Swan Valley both northwest (11 miles) and north (17 miles) from the project area (Lewis and Wenger 1998; BLM/FS Tech. Bull. 98-11; Whitfield and Coburn 1999; confirmed). Currently, no active dens are known in the project area or on the Palisades Ranger District.

Forest Data and Hair Transects: In January 1999 a confirmed lynx was sighted and tracks found in the Big Hole Mountains adjacent to the area where the Big Holes lynx hair grid (USDA FS, 2000) was to be placed (about 20 miles north). Beginning in 2001, the CTNF established a lynx hair survey grid in the Big Hole Mountains following the National Lynx Survey Protocol. This lynx hair survey grid was run for three years (2001, 2002 and 2003). No lynx hair were documented on the Big Hole grid in 2001, 2002 or 2003 (USDA, FS 2008 and prior; CTNF database).

Environmental Consequences

Direct, Indirect and Cumulative Effects

There will be no negative effect on lynx productivity due to treatment of 273 acres in the Calamity Summer Home area. No dens or reproducing lynx are currently known on the Palisades Ranger District or Caribou-Targhee National Forest, and none are expected. Traveling or roaming lynx moving through the District are expected however from time to time. As they do they will benefit from the expected increase in lynx prey in the area even though it is not in an LAU.

When cover patches are treated there will be a short term lack of cover, but forage for lynx prey will improve in the treated units in the next 2-4 decades as has been observed on other harvest areas on the Palisades District. For example harvest units in the Fish Creek Moody area of the District logged in the 1962 (USDA 2008; timber data) produce an estimated 5 to 27 hare (0.80-16.9/hectare) or rabbit tracks per mile (over the whole 9.9 mile transect). This is compared to other furbearer transects on the District in

un-harvested or lightly harvested areas (USDA 2008; furbearer transect data).

The proposed vegetation project to treat 273 acres will maintain “habitat connectivity” (no clearcuts) and vegetative cover will be arranged in a way that allows lynx to move through and around the area as required by “Standard ALL S1” and “Objective ALL O1” in NRLA Forest Plan Amendment (USDA 2007). Little of the project or special use permit area is used by domestic sheep for grazing, therefore, “Guideline LINK G2” related to livestock grazing will be met. A preponderance of mid- or late-seral stages will be maintained as would have occurred under historic disturbance regimes (e.g. wildfire). No negative direct, indirect or cumulative effect on lynx or lynx habitat is expected by this project.

Determination of Effects – Canada Lynx

The determination is that the proposed project to treat 273 acres will have “no effect” on lynx or lynx habitat. The project is not within a lynx analysis unit (LAU), but linkage habitat connectivity will be maintained.

Yellow-billed Cuckoo

The cuckoo is not federally listed under the Endangered Species Act as endangered, threatened or proposed. However, it is classified by the US Fish and Wildlife Service as “warranted” for listing, but funding is lacking to process it. The US Fish and Wildlife lists it as a “candidate species” for this area. Eastern Idaho has a breeding population in the cottonwood habitats along the South Fork of Snake River, but the nearest known nests are below Heise, Idaho.

Determination of Effects – Yellow-billed Cuckoo

No cottonwood nesting habitat is present in the project area, therefore no effect is expected on Yellow-billed cuckoos or their habitat.

Wildlife Sensitive & Management Indicator Species

Table 3.6 Occurrence of Sensitive Species on Caribou Targhee National Forest

Common Name	Scientific Name	Occurrence	Determination of Effects
Bald Eagle (<i>Haliaeetus leucocephalus</i>) (MIS, S)	<i>Haliaeetus leucocephalus</i>	Project area is potential nesting habitat. Foraging habitat is closely adjacent on the edge of Palisades Reservoir and along the South Fork Snake River below the dam. The closest nest is at Van Point. For detailed information on this territory refer to Alford (2008; BA/BE).	NLAA
Northern Goshawk (MIS, S)	<i>Accipiter gentilis</i>	Suitable habitat is present, but none are known to nest nearby. Closest known nest site is about 7 miles away. A territory reported about 3 miles away, but not found in 2005 (Reynolds 2005).	MIIH
Peregrine Falcon (MI S, S)	<i>Falco peregrinus anatum</i>	Project area is foraging habitat and the closest active eyrie is about 2-3 miles away.	NI
Boreal Owl (MIS, S)	<i>Aegolius funereus</i>	Known to be present on the District. None found during project surveys or past surveys in the area. Surveys will continue.	MIIH

Sensitive Species: NI = No Impact; MIIH = 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

Common Name	Scientific Name	Occurrence	Determination of Effects
Flammulated Owl (MIS, S)	<i>Otus flammeolus</i>	Spring breeding males have responded nearby and territories are located in the general area, but none found within the project area. One has been found near Russell Creek on the Calamity RTFP monitoring transect on some years (USDA 2008 and prior). One was found between Tag Alder and Russell Creek in May 2006 (Alford 2006). Surveys will continue before project implementation.	MIIH
Great Gray Owl (MIS, S)	<i>Strix nebulosa</i>	Habitat is present and surveys have been done in this area from 2000 – 2007 and none have responded to calling surveys. Surveys will continue.	MIIH
Trumpeter Swan (MIS, S)	<i>Cygnus buccinator</i>	No habitat is available in or near the project. They are found on the adjacent Palisades Reservoir at times and 1 mile away on the SFSR.	NI
Common Loon (MIS, S)	<i>Gavia immer</i>	No habitat is available in or near the project. They are found on the adjacent Palisades Reservoir during the spring migratory season. None are known to nest on the reservoir or District.	NI
Harlequin Duck (MIS, S)	<i>Histrionicus histrionicus</i>	Habitat not in the project area. They are seen on Palisades Reservoir, but rarely.	NI
Columbian Sharp-tailed Grouse (S)	<i>Tympanuchus phasinellus columbianus</i>	Present on Swan Valley benches on and off National Forest. No habitat is found in or near the records in the project area.	NI
Sage Grouse (S)	<i>Centrocercus urophasianus</i>	No records in the Swan Valley area or project area, habitat is not present.	NI
Three-Toed Woodpecker (MIS, S), and other MIS Primary Cavity Nesters	<i>Picoides tridactylus</i>	Habitat present in project area. No surveys have been done. Many species common and currently benefiting from high level of dead snags in the area.	MIIH
Western Big-Eared Bat (MIS, S)	<i>Plecotus townsendii</i>	Forest, rangeland, cliff and riparian habitat present on District and project area. Closest known caves with bats are 53 miles WNW and 84 miles S. Vocal recorded about 23 miles NNW by Bybee 2006).	MIIH

Sensitive Species: NI = No Impact; MIIH = 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

Common Name	Scientific Name	Occurrence	Determination of Effects
Spotted Bat (MIS, S)	<i>Euderma maculatum</i>	Forest, rangeland, cliff and riparian habitat present on the District and the project area. Vocal record reported about 31 miles northwest from the project (Austin 2004) and 23 miles NNW by Bybee (2006).	NI
Grizzly Bear (MIS, S)	<i>Ursus horribilis</i>	GB is not known to be here or Caribou Subsection. Idaho State GB plan indicates that it may expand to Big Holes/ Palisades area north of the Snake River, and this project area is south of the river. Closest record is about 11 miles north in Rainey Creek in fall 2007 (Hanuska-Brown 2007).	NI
Gray Wolf (MIS, S)	<i>Canis lupus</i>	Records are known on the Palisades Ranger District. In winter of 2007 a single wolf crossed the project area (USDA 2008; furbearer data). In 2007 an adult female with a pup was found in Fall Creek and denning is probable, but the den was not found. This was not classified as an official pack, because the definition for “pack” was not met by Dec 2007. The suspected adult male was killing livestock in Brockman and was killed by USDA Wildlife Services, APHIS in fall 2007 (Alford 2008).	NI
Wolverine (MIS, S)	<i>Gulo gulo</i>	Records on Palisades District in 1997, 2002, 2004, 2005. Radio marked male within 2 miles of the project in 2002. Potential denning habitat is mapped in the Palisades area within 5 miles. Data is available of wolverine crossing the reservoir/river near this location (Inman 2006 and prior).	NI
Fisher (MIS, S)	<i>Martes pennanti</i>	Habitat present. Closest Idaho CDC record 18 miles north near Forest boundary.	MIIH
Pygmy Rabbit (S)	<i>Brachylagus idahoensis</i>	No animals or habitat is known or suspected on Palisades Ranger District. Closest population is about 50 miles from project area to the northwest.	NI
Spotted Frog (MIS, S)	<i>Rana pretiosa</i>	Recorded on north end of Ranger District, but none are known in the project area. No surveys done here.	NI

Sensitive Species: NI = No Impact; MIIH = 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

Management Indicator Species

Common Name	Scientific Name	Occurrence	Determination of Effects
Red Squirrel Habitat (MIS)	<i>Tamiasciurus hudsonicus</i>	Common in the pines and mixed edge habitat. Tracking data available in Forest database (USDA, 2008 and prior).	Local negative effect for a period of time, but improved habitat over the long term.
Pine Marten (MIS)	<i>Martes americana</i>	Present on Ranger District in conifer forests. Tracking data available in Forest database (USDA, 2008 and prior).	Local negative effect for a period of time, but improved habitat over the long term.
Big Game Range (MIS) Elk, deer and Moose	<i>Cervus elaphus nelsoni</i> , <i>Odocoileus hemionus</i> , <i>Odocoileus virginiana</i> , <i>Alces alces</i>	Project area is elk and deer spring-summer-fall range. Forage consumed here provides body fat for winter survival. Moose are local all year.	Short term negative effect on big game hiding cover, but a positive effect on game forage.
Neotropical Migratory Birds (Non Sensitive and Non MIS)	<i>In Idaho 119 species of NTMB.</i>	Neotropical migratory birds (NTMB) use all habitats within the project area during the breeding season.	Minimal effect on neotropical songbirds.

Primary Cavity Nesters

The Revised Targhee Forest Plan (RTFP; 1997) specifies snag management for certain primary cavity nesters (Management Indicator Species, MIS) including the three-toed Woodpecker, black-backed woodpecker, Williamson's sapsucker, red-napped sapsucker, downy woodpecker, hairy woodpecker and northern flicker. The three-toed woodpecker is also a Region 4 Forest Service Sensitive Species.

Affected Environment and Consequences

Suitable habitat for all primary cavity nesters is present in this project. No specific surveys have been done for the sensitive three-toed woodpecker or other species, but they are assumed to be present through habitat relationships. Currently, an abundance of dead trees (snags) appear to be present for these species. The RTPF (1997) has specific "biological potential (BP)" guidelines for various "management prescriptions across the Targhee Forest. This BP rating varies with tree species and size of snag. For the predominate habitat of Douglas-fir, lodgepole and aspen it is estimated that 10.37 snags per acre would equal 100 percent BP. This would apply to the Calamity Fuels project area, primarily the Urban Interface prescription 5.1.3b. The RTFP guideline for BP in this prescription (5.1.3b) is 40 percent.

BP guidelines will be met for both prescription 4.2 (Special Use area) and 5.1.3b (urban interface area). In the Special Use Permit Recreation Sites Prescription 4.2, snags will be maintained as possible to strive to incorporate opportunities for watchable wildlife as directed in the RTFP if compatible with the SUP site. Note that there are no Forest Plan requirements for BP in this prescription, but as many snags as

possible will be left here. Prescription 4.2 is the housing area.

In Management Prescription 5.1.3b (No Clear-Cutting Urban Interface Fuels) snag habitat will be maintained to at least 40 percent biological potential for woodpeckers. This BP guideline requires about 3.7 snags per acre in the whole prescription parcel (not just the treated area).

Based on timber cruise data collected in the Calamity area in 2007 an average density of 6.5 snags per acre will be left in the 581 acre prescription 5.1.3b (USDA, 2007; FS data files) after the project treatment. This is the total snags per acre after 80 acres of harvest. The result will be about 3800 snags remaining throughout the prescription area (3800snags/581ac). Post-harvest snag BP for prescription 5.1.3b is then estimated at 63 percent. This exceeds the RTFP (USDA 1997) snag guideline for cavity nesting birds by about 23 percent. Additionally, some Douglas-fir will be left, including old relicts, which provide the best living snags and future snags. These will be left more protect from future wildfire.

Cutting activity will be delayed until after July 10 each year (March 16 to July 10). This will help get broods out of the tree cavities and fledged better. This is true for all the cavity nesters as well as for songbirds. The placement of and creation of nest structures as funding opportunities occur will also help these species. In relation to cavity-nesting birds it is concluded that the Calamity Fuels project 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.

Neotropical Migratory Birds – Affected Environment

Forest Data and Natural History: Neotropical migratory birds (NTMB) use all habitats within the project area during the breeding season. The project area has nesting habitat for both forest and rangeland birds which winter south of the border in Mexico and beyond. A major percentage of Idaho's 243 breeding bird species are in the project area (Idaho Partners In Flight 2000; Id. Bird Cons. Plan). Of the 119 species of neotropical migrant birds in Idaho, it is estimated that at least 65-70 percent are found there. A study in similar habitats on the Palisades Ranger District found 78 species (Kiene 1998). The northern goshawk and flammulated owl are two neotropical migrants which are treated in detail above because they are also FS sensitive species as well as Targhee Forest MIS species. No monitoring of neotropical bird species numbers or diversity has been conducted within the project area, therefore local population trends are unknown. However, by habitat relationship data (Idaho PIF 2000) it is determined which species are here.

Idaho Bird Conservation Plan Habitats and Species

Lodgepole Forests: The Idaho PIF Bird Conservation Plan (2000) has not identified any high priority species using lodgepole pine as their primary breeding habitat. However, 31 species breed in lodgepole and 5 species use it as their primary breeding habitat. Many species with the highest percent population scores (Idaho PIF 2000; appendices 2 and 3) breed in lodgepole and therefore land resource managers within Idaho have a responsibility to maintain or improve the quality of this habitat. Seral lodgepole is one of the tree species targeted by this vegetation project.

Mountain Brush: This habitat is found scattered among other conifer and aspen types in and around the project area. The mountain brush habitat identified by PIF includes mesic upland deciduous shrub communities which occur in northern Idaho and warm mesic shrubs which are upland shrublands that occur naturally or are initiated by fire or timber cutting. The warm mesic shrublands include alder, serviceberry, Oregon grape, snowberry, ceanothus, ninebark, chokecherry, rose, currant, willow, elderberry, and spirea. There may also be mountain big sagebrush. This type occurs throughout Idaho. No high priority species use the mountain brush habitat as their primary breeding habitat. However, the Sharp-tailed Grouse (non NTMB) is dependent upon this type for wintering habitat.

Sagebrush Habitat: This is a high priority habitat for management of birds in Idaho. It is not a target habitat of the project, but it is present on the edges in a limited amount. There are 13 high priority and target bird species for management in sagebrush and those of most concern are the sage obligate species. There are 9 species which use sagebrush as their primary breeding habitat. Many of these are migratory.

Aspen Forest: Clones are scattered in the project and are experiencing conifer encroachment which is altering species abundance and biodiversity. The current insect epidemic is working to impede this encroachment by causing heavy conifer mortality in many of these areas. The reduction in competition will assist decadent and suppressed aspen stands to release and expand back into historically occupied habitats. Over 30 bird species breed in aspen forests in Idaho, but there are no bird species that occur only in aspen stands. However, some species, for example the Red-naped Sapsucker, Warbling Vireo, Orange-crowned Warbler, Northern Waterthrush, Cordilleran Flycatcher, Blue Grouse, and Ruffed Grouse are particularly attracted to aspen stands for at least part of the year. Goshawk commonly nests in aspen stands and the flammulated owls typically nest in aspen snag cavities (Alford 2008; Bandolin 2000 Id. PIF pers. comm.). Aspen provides a deciduous component within coniferous or shrub steppe habitats, increasing plant and animal species diversity. Aspen trees are especially important for cavity nesters because of their susceptibility to heart rot. Thirteen cavity nester species are associated with aspen. The diverse, and often moist understory attracts insects that are important to the insectivores. Suppressed aspen clones are a target in the project area so as to increase clone vigor and increase fire resistance to local homes and buildings located there.

Riparian Habitat: This is a high priority bird habitat in Idaho and it is present near the project area but not in the impact zones. Thirteen high priority bird species use riparian as a primary breeding habitat. Of the 243 bird species breeding in Idaho, 113 or 46 percent use riparian for nesting. Many of the other 130 species also use riparian habitat as a source of water, as migratory corridors, or for other purposes. Of the 119 NTMB 68 or 57 percent use riparian habitat.

Low Elevation Mixed Conifer Forest: This is a broad category PIF habitat which includes Douglas-fir as well as other conifer species. It is found in the project area and the primary habitat targeted for fuels reduction here. Idaho PIF lists 83 bird species that use this habitat as breeding habitat, of which 35 use it as a primary breeding habitat. Nine high priority bird species use this habitat as their primary breeding habitat. In Idaho these include Lewis' Woodpecker, Williamson's Sapsucker, Dusky Flycatcher, Varied Thrush, Townsend's Warbler, Northern Goshawk, Western Tanager, Sharp-shinned Hawk, and Brown Creeper. In addition, many of the species with the highest percent population scores (Idaho PIF 2000; appendices 2 and 3) breed in this habitat.

Management Direction: Migratory birds are not listed as a group in the RTFP (USDA 1997) for analysis, and only a few are federally listed by the FWS or as a FS Sensitive species, however, because of federal direction and the Migratory Bird Treaty Act protections they are discussed.

Executive Order (EO) 13186, signed January 10, 2001, lists several responsibilities of federal agencies to protect migratory birds. Direction includes:

- 1) Support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- 2) Ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes to evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern.

3) Identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service. These principles, standards, and practices shall be regularly evaluated and revised to ensure that they are effective in lessening the detrimental effect of agency actions on migratory bird populations. The agency also shall inventory and monitor bird habitat and populations within the agency's capabilities and authorities to the extent feasible to facilitate decisions about the need for, and effectiveness of, conservation efforts.

Additional direction comes from the Memorandum of Understanding (MOU) between USDA Forest Service and USDI Fish and Wildlife Service, signed January 17, 2001. The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the FS and FWS, in coordination with state, tribal and local governments. The MOU identifies specific activities for bird conservation, pursuant to EO 13186 and includes:

1. Strive to protect, restore, enhance, and manage habitat of migratory birds, and prevent the further loss or degradation of remaining habitats on National Forest System lands. This includes:
 - a. Identifying management practices that impact populations of high priority migratory bird species, including nesting, migration, or over-wintering habitats, on National Forest System lands, and developing management objectives or recommendations that avoid or minimize these impacts. This will help inform future specific protocols called for in an MOU implementing the Executive Order.

Neotropical Migratory Birds(NTMB) – Direct, Indirect and Cumulative Effects

The Calamity Hazardous Fuels project will impact NTMB birds directly, indirectly and cumulatively. Upwards to 273 acres of nesting forest habitat will be altered. This is a cumulative effect of new acreage being impacted in addition to that forest type which was removed or altered during the past decades due to urban development as well as roads, campgrounds and Palisades Dam construction and inundation.

Lodgepole Habitat: Most of the new direct and indirect impact will be in mature coniferous forested habitat as well as aspen. Lodgepole pine is not considered a priority habitat for NTMB and currently no priority breeding bird species use lodgepole pine as their primary breeding habitat. However, 31 species of birds are known to nest in lodgepole and 5 species use it as their primary breeding habitat. It is estimated that about 90 percent of the current lodgepole type will be altered within the project area.

Sagebrush Habitat: Little or no impact is expected on sagebrush dependent NTMB species.

Mountain Brush: Mountain brush habitat will be impacted, but mountain brush is expected to increase and resprout with the opening up of forest canopy to more sunlight. This diversification and new growth of mountain brush will benefit a diversity of NTMB bird species in the longer term. Some brush would be altered. No high priority bird species use the mountain brush habitat as their primary breeding habitat so no critical effects on NTMB are expected.

Aspen Habitat: Aspen habitat will be impacted. For aspen in the prescription areas it is also difficult to quantify the exact impact on acreage. Aspen like brush is scattered in the project area. Aspen also is expected to increase and resprout with the opening up of forest canopy to more sunlight. The over abundance of mature class aspen would decrease some and the more open forest canopy after treatment will benefit the production of younger aspen age classes. This diversification of the aspen type will benefit a diversity of NTMB bird species in the longer term. The aspen type which is actually declining due to old age and encroachment by conifer will be rejuvenated by the treatments (e.g. mechanical and burning). For a period of time, some of the 30 species plus, which are potentially nesting in aspen will be negatively impacted by this alternative, but in the long term aspen associated species will

benefit. The mitigation measure to restrict treatment activity during the nesting season from March 16 - July 10 will help prevent the direct mortality of birds in the nest and young fledglings still unable to fly. Other projects and design features identified will benefit birds such as temporary nesting structures and water guzzlers. Goshawks on the Palisades RD have actually been attracted into a treated timber sale area by a guzzler and flammulated owls in an aspen snag have been cut down by a firewood cutter during the nest season (Alford 2008; Kerner 2004; Merrill 1997).

Riparian Habitat: The project area is not in riparian habitat. Birds nesting in riparian habitat nearby will not be affected.

Low Elevation Mixed Conifer Forest: For the mixed conifer forest such as Douglas-fir, alpine fir, spruce mixed with lodgepole the project will impact NTMB birds directly, indirectly and cumulatively. Upwards to 273 acres of nesting habitat will be altered. This is a cumulative effect of new acreage in addition to that removed or altered already by urban development, roading, campgrounds and dam construction. Most of the new direct and indirect impact will be in mature conifer forest and aspen. Mitigation and design features will help soften the impact on the 9 high priority birds which use this type as their primary breeding habitat as well as the other 74 breeding birds here. Thirty-five of these species use this forest type as a primary breeding habitat (Idaho PIF 2000). However, the intensity of the impact from habitat change and direct mortality will be softened by the leaving some of the standing snags and down woody material/ wood piles away from the houses and buildings in the project area, and by delaying the treatment activity until after July 10. The treatment will impact a percentage of this type, but the plan is to leave a portion of the Douglas-fir type including old relict trees which have high value for neotropical song birds (RTFP Caribou subsection direction, USDA 1997).

In the broader landscape view of the whole Caribou subsection, most of the coniferous cover type acres are predominately late seral and mature/ over mature forest in roadless areas where little future timber harvest will occur (USDA, FS 1997; RTFP; USDA, FS 2008; GIS database). This broad expanse of mixed conifer forest habitat is available to NTMB birds for nesting. With this perspective the Calamity Summer Home Fuels project will have a minimal effect on neotropical songbirds in this type on the Palisades Ranger District and Caribou Subsection landscape.

This alternative to treat the vegetation and fuels in this area is compliant with the EO 13186 because the analysis meets the Forest Service obligation as defined under the January 16, 2001 MOU between the USDA-FS and USDI-FWS designed to complement EO 13186. As required under this MOU, this alternative: 1) Identifies management practices that may affect high priority species as defined in the MOU and Partners in Flight, and 2) develops conservation measures to avoid or minimize impacts to migratory birds. Overall, the negative effect on birds will occur for a period of time and composition will change as vegetation composition and structure changes.

Project Record

This Environmental Analysis hereby incorporates by reference the Wildlife Specialist Report and the Biological Assessment/Biological Evaluation for the Calamity Hazardous Fuels Reduction Project in the Project Record (40 CFR 1502.21). These reports contain additional detailed data, methodologies, analysis, references, and other technical documentation concerning not included in this chapter & is available at the district office for public review.

Hydrologic Resources

Introduction

This report discusses the conditions of watershed resources within the project area and discloses effects of the proposed action on these resources within the analysis area. The analysis presented here will focus on three areas: water quality, soil productivity, and slope stability. These watershed process elements will be used as indicators to determine the relative condition of hydrologic functions occurring within the project area. These elements, their measurement criteria, and existing conditions of each will be discussed in subsequent sections.

Affected Environment

The hydrology analysis area is Targhee Principal Watershed (TPW) 037: Elk-Bear Creeks and TPW 038: Fall Creek. The temporal scope of this analysis is approximately 10 years into the future.

Water Quality: Ground disturbing activities have the potential to alter watershed function and degrade downstream water quality. The use of ground-based equipment and roads could disturb the soil surface, which could in turn alter watershed function. Erosion and subsequent sediment could adversely affect downstream water quality and stream channel function. The primary issue, therefore, is the potential effect of the proposed project on water quality.

State Water Quality Standards and BMPs: The Idaho Department of Environmental Quality has identified surface water use designations and the water quality standards necessary to support those uses (IDEQ 2007). Following are the beneficial uses within and downstream of the project area: Cold Water Communities, Salmonid Spawning, Primary or Secondary Contact Recreation, Domestic Water Supply, Special Resource Water, Agricultural and Industrial Water Supply, Wildlife Habitats, and Aesthetics

Through a Memorandum of Understanding (MOU) with the State of Idaho, the Forest is responsible for implementing nonpoint source pollution control measures (i.e. BMPs) during all management activities (USDA FS 2008). The Idaho antidegradation policy states that the designated uses and the level of water quality necessary to protect those uses shall be maintained and protected. It is also Forest Service Policy to maintain or improve water quality (RFP and FSM 2500 (2520.3)). Idaho recognizes BMPs as an effective process for protecting beneficial uses and ambient water quality. Project-specific BMPs are covered in Chapter 2 of this Environmental Assessment.

Water Quality Limited Waters, Total Maximum Daily Loads (TMDLs), and BMPs: The IDEQ has identified the water quality assessment unit within the project area as “impaired” due to sediment (IDEQ 2003 & 2008). Although the data for Russell and Tag Alder Creeks were discussed in the most recent subbasin assessment (IDEQ 2001), no TMDLs were developed for those streams. The Forest must therefore ensure that cost effective BMPs or knowledgeable and reasonable control measures are properly implemented during projects so that no further degradation occurs or that waters are improved (IDEQ Policy for No-Net Increase, PM98-2) (USDA FS 2004). Project BMPs designed to protect long-term water quality and watershed conditions for the action alternatives are included in the hydrology specialist report in the project record.

Hydrologic Disturbance: Table 3.7 displays estimated current hydrologic disturbance level within the analysis areas. This analysis is very conservative; the true hydrologic disturbance is expected to be much less than the estimate below.

Table 3.7: Estimated current hydrologic disturbance in the analysis areas.

Watershed	Existing Hydrologic Disturbance (%)
TPW 37 Elk-Bear Creeks	7%
TPW 38 Fall Creek	7%
Subwatersheds: Sixth-Level HUCs clipped to TPWs)	
170401040101: Palisades Reservoir	2%
170401040601: Snake River-Sheep Creek	5%

Environmental Consequences

The **No Action Alternative** would provide little direct or indirect change in water quality or hydrologic disturbance from existing conditions. Within the analysis area, the Brockman Vegetation Management and Fall Creek Aspen Projects could still occur. Those projects would partially occur within TPWs 037 and 038, but not within the same subwatersheds (6th level HUCs) that the Calamity Project is located in.

Action Alternatives:

Table 3.8 shows the hydrologic disturbance that would be generated by those previously approved projects and the proposed action alternatives. The timing and duration of flows are not expected to be a concern because of the relatively small area proposed for treatment within the larger analysis area and watershed (USDA FS 2002). (Higginson 2007).

Table 3.8: Hydrologic disturbance expected from no-action and action alternatives.

Watershed	Hydrologic Disturbance (%)	
	No Action Alternative	Action Alternatives 2 &3
TPW 037 Elk-Bear Creeks	3%	0
TPW 038 Fall Creek	4%	0
170401040101: Palisades Reservoir	0	1%
170401040601: Snake River-Sheep Creek	0	2%

Cumulative Effects

No Action Alternative

Water quality would continue to improve as past hydrologically disturbed areas recover. The Fall Creek and Brockman Vegetation Management projects could occur, which would increase the amount of hydrologic disturbance in TPWs 037 and 038. The impaired water quality AU (303(d) listed) in the analysis area will be addressed through the next subbasin assessment and TMDL process expected to be re-initiated within the next few years.

Effects Common to Both Action Alternatives

Water Quality: Water quality is expected to improve as past disturbed areas continue to recover. The impaired AU (i.e. 303(d) listed) within the analysis area will be addressed through the subbasin assessment and TMDL development process expected in the next few years.

Hydrologic Disturbance: The action alternatives would slightly increase the amount of hydrologic disturbance in the analysis areas, but the watersheds and subwatersheds would still be well within the 30% guideline of the RFP. Table 3.8 lists the hydrologic disturbance information for the project. Additional information on this analysis is found in the hydrology specialist report.

Table 3.9: Cumulative hydrologic disturbance.

Watershed	Existing HD from Brockman and Fall Creek Projects (%)	No Action Cumulative Hydrologic Disturbance (%)	Hydro. Disturb. Generated by Calamity Project (%)	Cumulative Hydrologic Disturbance (%)
TPW 037 Elk-Bear Creeks	3%	10%	0%	10%
TPW 038 Fall Creek	4%	11%	0%	11%
Subwatershed: Sixth-Level HUC clipped to TPW				
170401040101: Palisades Reservoir	0%	2%	1%	3%
170401040601: Snake River-Sheep Creek	0%	5%	2%	6%

Soils Resource:

Introduction:

Soils were evaluated during on-site field visits, by transecting, and by GIS analysis.

Affected Environment

The project area analysis boundary for the soil resource is 273-acre boundary of the proposed project area. This boundary is consistent with regional Soil Quality Monitoring guidance as an activity area and is a reasonable bound for determining the direct, indirect and cumulative effects to the soil resource from the proposed project. Activity areas are designated harvest units.

Geology, Ecological Units, and Landtype Associations

The project area is located in the Caribou Range Mountains subsection (M331Di) nested within the High Caribou Mountains – Conifer Forest Landtype Association (LTA). The northeast side of the range is moderate relief foothills and mountains on mixed sediments. Landform is mostly foothills and mountains with elevations ranging from 5,600 to 8,500 feet although the project area ranges from 5,600 to 6,250 feet. The parent material is derived from loess (wind blown sediments).

On many sites, vegetation productivity is directly influenced by soil characteristics such as soil depth, infiltration/permeability, soil texture and rock fragment content among other factors (USDA Forest Service 1995). Soils are most productive where they are deep and have an adequate supply of moisture during the growing season. These soil conditions are represented in most riparian areas and in most aspen, upland sagebrush, and conifer types in the analysis area.

Soil Disturbance - Existing Condition

Soil disturbance was calculated for the treatment areas in the proposed action (Table 2). Disturbances include disturbance from previous timber harvest activity, firewood collection, pioneered roads and atv trails, and recreation use. Detrimental soil disturbance in the proposed treatment area is currently below the 15% Regional Guideline (FSH 2509.18 r4_2509.18-2002-1).

Table 3.10 Treatment units affected by detrimental soil disturbance from the proposed action and cumulative actions in the analysis area.

Treatment Unit	Acres	Existing Disturbance (Acres)	Projected Detrimental Disturbance (acres)	% Detrimental Soil Condition
Timber harvest area	92	3.5	10	14.6%
Broadcast burn area	133	3.0	4	5.2%
Masticate-thin/pile area	169	1.0	12	7.6%

The existing condition of the proposed treatment area currently meets the Targhee National Forest Revised Forest Plan (RFP) standards and guidelines for fine organic matter and woody residue requirements (see transect data). The proposed treatment area also meets the regional soil quality guideline of detrimental soil disturbance in activity areas. Ground cover and woody residue also meet guidelines in the RFP. Soils in the project area have been determined to be suitable and capable of sustaining the anticipated effects from timber removal and fuels treatment activities when following recommended design features and conservation practices.

Measurement Indicators

The quantitative indicator used in this analysis is percent detrimental disturbance, existing tons of woody debris, and percent ground cover trend. Additional qualitative measurement indicators include soil conditions as described in soil profiles and observations on watershed condition.

Ground cover trend is an appropriate proxy for soil quality in the assessment of the effects of erosion. Litter, duff and organic ground cover are the most important components of the forest environment for protecting the mineral soil from erosion (Elliot et al. 1996). Therefore, soils that have adequate ground cover are protected from erosion rates in excess of soil loss tolerances (see Table 1) that threaten long-term productivity. A minimum of 50 percent cover is required by the RFP.

Coarse woody debris (CWD) is also necessary for long-term nutrient cycling. Quantities must meet the RFP to maintain nutrient cycling for future soil fertility. This habitat type is a dry Douglas-fir type requiring 5 to 10 tons of CWD per acre.

Detrimental soil disturbances are required to be less than 15 percent of an activity area (harvest unit) as required by the National Forest Handbook 2509.18.

Background Erosion

The Water Erosion Prediction Project (WEPP) was used to estimate erosion rates for different vegetation types and surface soil textures (Wilcox et al 1992).

Soil Loss Tolerance values of 5 tons/acre/yr for the soils that may be affected in the project area (USDA Forest Service, 1999) is the maximum allowable soil loss for the project area. Erosion monitoring shows soil loss on similar treatments on different areas of the forest to be less than 1 ton/acre the years following treatments (Caribou NF Soil Monitoring Report 2006-2007). The soil-loss tolerance value reflects the maximum rate of annual soil erosion at which plant productivity can be sustained indefinitely. It is dependent on the rate of soil formation and type of vegetation being managed. Generally, deeper soils have more capacity to sustain higher erosion losses than shallow fragile soils without losing productivity. Ground cover must cover greater than 50 percent of the activity area after treatments occur. The WEPP model also predicts soil loss will be less than soil loss tolerance on disturbed areas as long as disturbance occurs on slopes less than 40 percent and ground cover is maintained.

Mass Stability

Although the ecological units in the proposed project area are mapped as unstable foothills, a stability analysis was completed on June 4, 2007 for the area. No landforms were identified as being unstable in the project area. No active or inactive landslides were found and risk for causing a mass failure is low when treatments occur on slopes less than 40 percent and when soils are dry or frozen.

Environmental Consequences

No Action Alternative:

The soil resource should not be negatively affected by the implementation of Alternative 1. There is currently enough down woody debris and ground cover to protect the soil from erosion. Soil condition should remain static unless uncontrolled wildfire occurs. No cumulative effects are expected with this alternative because no disturbance would occur.

Action Alternative 2:

The proposed project has the potential to result in minor, scattered areas of detrimental soil disturbance as a result of ground based harvest and masticating equipment. Also, a slight, seasonal reduction in ground cover can be expected in isolated areas as a result of skidding. These kinds of disturbances typically occur in areas where repeated passes by a skidder occur on a skid trail or landing causing compaction and

reduce ground cover. Based on professional experience, soil monitoring and soil assessments conducted on similar treatment areas on similar soils, the disturbances with the potential to affect soil productivity are usually of minimal extent when all project design features are applied appropriately (Aspen Range Timber Harvest Monitoring 2007; Emigration Timber Harvest Monitoring 2007; Sheep Creek and Mennonite Camp Soil Monitoring 2007). The risk of soil rutting is high on ecological unit 1112 (see web soil survey report) so it is recommended that the soil are dry when operations occur. Although impacts to the soil resource are expected in the form of compaction and displacement, disturbance should be well within the Regional Guidelines and meet RFP standards and guidelines.

Ground cover necessary to protect soils from accelerated erosion should be greater than 60 percent based on watershed and erosion research (Noble 1963). Existing ground cover within the analysis area based on transecting data, shows ground cover levels to be near 100 percent across the area. The WEPP model indicates a slight increase in erosion above background levels after treatments occur.

On-site evaluation indicates that the soils are maintaining long-term soil productivity or are trending toward desired future conditions defined in the RFP. Indicators of maintenance of soil productivity; percentage of ground cover, soil compaction and signs of erosion, were evaluated at several sites within the project area using the Soil Condition Evaluation and Qualitative Soil Management Monitoring checklist.

Action Alternative 3

The effects on the soil resource related to implementing Alternative 3 would be slightly less than Alternative 2 because 20 acres less would be commercially thinned and should reduce the disturbance impacts caused by harvest equipment. However, an additional 20 acres will be treated by mastication/thin and pile which has the potential to cause soil disturbance from smaller machinery. Past monitoring of masticating machines have shown “a slight increase in bulk density” may occur but should not reach any threshold for plant growth limitations (Tepler 2005). Implementation of design features should mitigate most effects on the soil resource. This alternative should comply with the Regional Soil Quality guidelines and meet RFP standards and guidelines.

Cumulative Effects Action Alternatives

Past, present and reasonably foreseeable future actions in the project area include livestock grazing, use of system and non-system roads and trails by ATVs, dispersed camping, and firewood collection. These actions generally result in small, scattered areas of increased compaction and potential for soil erosion.

The effects of the proposed project on the soil resources, combined with the effects of the cumulative actions identified, would be minor areas of increased compaction and potential for erosion. Cumulative detrimental soil disturbance is estimated at 5 to 14 percent of the project area which meets Regional Soil Quality Monitoring guidance. Detrimental disturbance to soils from past, present and foreseeable future activities identified in this report is not at a threshold or limit that would harm long-term soil productivity in the project area.

No irreversible or irretrievable commitments of the soil resource are expected from continued management within the project area while operating within the standards and guidelines of the Revised Forest Plan.

Balancing of Short and Long-term Effects:

Section 106 (c),(3) of the Healthy Forests Restoration Action of 2003 addresses the need to consider and balance the impact to the ecosystem likely affected by the project relative to short-and long-term effects against the short- and long-term effects of not undertaking the agency action.

Fire and Fuels

The primary short and long term effects of **no action** results in vegetative conditions that would continue to move away from desired conditions and continue to present risks of uncharacteristic large scale wildfire to the Calamity Summer Homes Area.

Stand species composition; structure and density would continue to move away from historical conditions. Overstocked stands would continue to increase in density and fuel build up, and develop increased understory ladder fuels, resulting in conditions more favorable for uncharacteristic (lethal) wildfire. When wildfire returns to these stands, it will most likely be a stand replacement fire, likely threatening the adjacent summer home community & campground.

The primary short and long term effects of the **action alternatives** are beneficial impacts related to the reduction of hazardous forest fuels. The planned vegetation treatments will result in lower stand densities and species composition will reflect more historic conditions with the promotion of fire resilient early seral species. This will reduce fire intensity and severity within the project area adjacent to the Calamity Summer Homes. A reduction of fuel loads will reduce difficulty of control and provide for safety of firefighters and the public. The reduced densities and fuel loading, maintained over time, will effectively reduce the threat of crown fire initiation and propagation throughout the area.

Economic Costs

Not implementing the proposed action increases the risk of stand replacing wildfire. In this event, large amounts of money would go towards fire suppression and rehabilitation efforts. If a wildland fire escapes initial attack and reaches a size of over 30 acres in the wildland urban interface, the incident is very likely to continue to grow in size and complexity requiring a Type 2 or 1 Incident Management Team. The fires requiring these teams are often burning in the same fuel types and terrain that are present in the Calamity area. The suppression costs for these incidents on the Caribou-Targhee National Forest are staggering. A 2007 fire in similar fuel types outside of the wildland-urban interface that burned only 80 acres cost approximately \$1,200,000 to suppress. This cost is only the expense for suppression activities and does not account for lost resource values, rehabilitation or private structures that would be in jeopardy. Attempting to predict or compare potential wildfire suppression costs relative to “no action” vs. a proposed action is highly speculative at best. Nevertheless associated recent wildfire events on the Caribou-Targhee are used as a basis for a potential range of ‘no action’ suppression costs in table 3.5. Assumptions for wildfire suppression costs in the action alternatives reflect the increased probability of successful initial attack due to reduced fuels. Costs associated with potential property loss are difficult to assess due to the unpredictability of wildfires and wildfire suppression success and are not included in this comparison. Nevertheless with the proximity of the summer homes within the special use permit area, private property lost due to a wildfire could easily reach substantial figures. Also not included are costs associated with loss of other resource values including scenic vistas and wildlife habitat.

The proposed action represents an investment in fuel reduction activities designed to reduce risks of catastrophic large scale wildfires, increase wildfire suppression success, and reduce costs associated with large scale wildfires in a wildland urban interface. The above table reflects a potential net economic

benefit of the proposed action ranging from -\$167,311 to +\$842,378 depending upon the costs incurred with a wildfire event associated with no action.

Costs associated with the proposed action exceed the revenues generated from wood products due to the primary purpose being hazardous fuel reduction and the extensive amount of acres planned for prescribed burning and mechanical removal of smaller non-commercial sized material that contribute to fuel ladders and hazardous fuel conditions. Additionally, these costs do not reflect losses associated with private structures and other resource values potentially lost with wildfire events.

Air Quality

Not implementing the proposed action would avoid introduction of temporary and short term smoke and particulate matter but the risk would remain for the potentially significant smoke and air quality impacts associated with wildfire. Prescribed fire smoke emissions are typically much less than wildfire emissions due to lower fuel consumption, shorter duration and the ability to time ignitions when weather conditions are optimal.

Watershed Condition

The action alternatives will reduce fuel loads such that a future wildfire would be expected to be of low severity. This protects soil productivity and vegetative cover, leading to small increases in sediment delivery to streams as opposed to the large increases in sediment that occur after high severity wildfires. Wildfire associated with no action would greatly increase the likelihood of a landslide occurring within the project area. Because root strength is a factor in slope stability, the reduction in root strength from tree mortality following a wildfire would increase the risk of landslides. This would be a long term effect as tree roots would not be expected to reestablish for 20 – 50 years post-fire. The same wildfire would likely result in hydrophobic soils, soil erosion, and large increases in sediment yield. If the area is not treated it is much more likely that the burn severity of any wildfires would greatly reduce vegetation and riparian buffers in particular. Vegetation recovery sufficient to reduce erosion after a severe wildfire would not be expected to occur for 10 to 15 years.

Scenic Environment

The current scenic environment is defined by a dense forest with high vegetative screening from the environment. While it is difficult to predict the actual results and timing of such a wildfire event, it is likely that such an event would result in considerable long-term changes in the scenic environment. Much of the current forested landscape in the project area could appear as a burned over landscape with a very high degree of fire caused mortality. Recovery to a mature forested landscape would take numerous decades. While fire processes are a natural part of landscape changes, a large scale, high intensity wildfire would result in the loss of both overstory & understory vegetation for 10 years up to as long as 40 years before an overstory begins to reestablish. Many people would view a resulting fire dominated landscape of charred tree boles and snags with few live trees as a reduction in visual and scenic quality of the area.

Wildlife Resources

Lynx

In the short term, horizontal vegetation continuity would continue to increase and the stands could convert to multi-story mixed conifer without any aspen present. However, in the long term a wildfire will eventually occur which is likely to remove the entire overstory reducing linkage habitat for up to 40 years.

Chapter 4

Consultation and Coordination

Chapter 4: Consultation and Coordination

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). In addition to the following specific activities, the Calamity project has been listed on the Caribou-Targhee National Forest Schedule of Proposed Actions since October of 2003. To date, the public has been invited to participate in the project in the following ways:

Public Mailing

As this project was originally authorized under the HFI Hazardous Fuels Categorical Exclusion the NEPA process began when the proposed action was disclosed to the public in July, 2005. A scoping document was sent to 86 individuals, agencies and interested groups for the 30 day comment period. Scoping was conducted for special use permittees at a summer home association meeting. This project was also published in the Post Register in Idaho Falls, Idaho on July 20th 2005. The public was invited to submit comments through mail, e-mail, or oral comment. Due to a court ruling concerning notice, comment and appeals for categorically excluded projects such as this one, substantive comments were sought a second time in November, 2005. The notices were sent to the same individuals, agencies, and interested groups for an additional 30 day comment period. The second notice also stated that those interested parties who had previously submitted comments during the initial 30 day comment period would receive equal consideration and those previous comments would provide standing in the appeal process. Announcements about the project were printed in the Idaho Falls Post Register.

Due to a court case in California all HFI Hazardous Fuels Reduction Categorical Exclusions not yet completed have been suspended and must be reauthorized by a new decision. As such, this is the third time that this project has been brought forth for public scope & comment.

The 3rd public scope & comment was released on March 24, 2008 a total of 5 responses were received.

Public Meetings

A public meeting was held at the Calamity Summer Homes on May 19, 2007 to provide project area information, present the proposed action, and discuss local concerns and interests that should be addressed in the Calamity project analysis. The meeting was attended by Calamity Summer Home Permittees.

Other Coordination and Collaboration

A series of meeting were held with representatives of the Bonneville County Wildfire Group and local interested citizens for the development of the 2004 County Wildfire Protection Plan. During these meetings the public participated in the development of fuels treatment priorities for Bonneville county.

List of Organizations, Agencies, and Persons Consulted

The Forest Service consulted the following individuals, Federal, state and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment:

Tribal Authorities:

Shoshone-Bannock Tribes

Federal Agencies and Elected Officials:

Office of Sen. Larry Craig
Office of Sen. Mike Crapo
Office of Sen. Mike Enze
Office of Rep. Mike Simpson
Bureau of Indian Affairs
Grand Teton National Park
U.S. Bureau of Reclamation
U.S. Fish and Wildlife Service
USDA Natural Resources Conservation Service

State/Local Agencies and Officials:

Bonneville County Commissioners
Idaho Dept. of Parks and Recreation
Idaho Department of Water Resources
Idaho Department of Agriculture
Idaho Dept. of Fish and Game
Idaho State Historical Preservation Office
Idaho Department of Lands
Idaho Department of Environmental Quality

Organizations, Private Citizens and Businesses:

Letters were mailed to 59 additional individuals, trusts, organizations, and businesses.

List of Document Preparers

Mike Yasuda

Position: Recreation Technician
Contribution: Recreation Analysis

Ali Abusaidi

Position: Archaeologist
Contribution: Cultural Resource Analysis

Bud Alford

Position: Wildlife Biologist
Contribution: Wildlife Analysis

Kristy Swartz

Position: Asst. Fire Management Officer(Fuels Management)
Contribution: Team Leader, Fuels/Prescribed Fire Analysis, Air Quality Analysis

Aleen Orr

Position: Engineer
Contribution: Transportation Analysis

Rose Lehman

Position: Botanist
Contribution: TES Plants Analysis,

Brad Higginson

Position: Hydrologist
Contribution: Hydrologic Analysis

James Capurso

Position: Fisheries Biologist
Contribution: Fisheries Analysis

Tom Silvey

Position: Supervisory Forester
Contribution: Financial Assessment

John Lott

Position: Soils Scientist
Contribution: Soils Analysis

Melissa Jenkins

Position: Forest Silviculturalist
Contribution: Vegetation Prescriptions