

# Hell Canyon Maintenance Burn Project Scoping Document

## Introduction and Background:

The Hell Canyon Ranger District is proposing to reduce fuels and improve forest health within the Jasper and Roger's Shack fire areas.

In August and September of 2000 the Jasper Fire burned approximately 83,511 acres, 79,404 of which were on National Forest System Lands; the largest fire in the recorded history of the Black Hills. The fire was started as a result of arson on August 24<sup>th</sup>. The fire spread rapidly and overpowered suppression efforts. On the afternoon of August 26, 2000, the fire exploded, growing at an average rate of more than 100 acres per minute. The fire was officially contained on September 8, 2000.

In July and August of 2001 the Rogers Shack fire burned approximately 11,879 acres, 264 of which were on National Forest Lands. The Rogers Shack Fire was caused by lightning and was managed with several other lightning caused fires in the area as part of the Elk Mountain II Complex. The Elk Mountain II Complex became the second largest fire in the recorded history of the Black Hills.

Both fires experienced stand replacing fire behavior with much of the area experiencing high to moderate intensity wildfire. The high intensity fire areas resulted in the nearly 100% mortality in the overstory and the consumption of nearly all the fine fuels. The result was a stand that is completely "black". Moderate intensity fire resulted in areas where much of the overstory was killed however some of the fine fuels remained giving the stand a "brown" appearance. Those areas of high to moderate wildfire intensity have resulted in elevated fuel loadings as a result of the dead trees falling to the ground.

Beginning in the late 1990's large beetle epidemics started and over the past 10 years there have been outbreaks across the forest, many that are causing landscape level changes in the forest. Mountain pine beetle (*Dendroctonus ponderosa*) is showing increased activity in the pine stands within the analysis area. Patches of dead trees ranging from two or three to several large patches of dozens of infected trees can be seen in areas where there is still a heavy concentration of trees. The most noticeable area of infestation is along the Antelope Ridge Road (Forest Service Road (FSR) 283) around the intersection of the Surveyor's Hill Road (FSR 668) and less than a mile to the east of this intersection along the Mud Springs Road (FSR 282).

## Project Area Description:

The Hell Canyon Maintenance Burn Project Area is located in Custer County and Pennington County, South Dakota and is entirely within the Hell Canyon Ranger District of the Black Hills National Forest. In general, this project is located approximately 10 miles west of Custer, SD and 18 miles east of Newcastle, WY (see map 1). The project includes burning as well as mechanical thinning and would occur in 3 distinct parcels (see map 2). The project includes 2,926 acres of commercial treatments and 17,983 acres of non-commercial treatments; 16,986 of which is prescribed burning. All proposed activities would occur on National Forest lands. There are several arterial roads which access the project area including NFSR (National Forest System Road) 282, 283, 284, 668, 221, 273, 277 and US Hwy 16.

## Purpose and Need:

The purpose for action in the Hell Canyon Maintenance Burn project area is to reduce long term fire hazard and improve health and vigor of forested stands in the Jasper and Rogers Shack fire areas. The 2000 Jasper Fire and 2001 Rogers Shack Fire created areas of dead and dying stands. In addition, mountain pine beetle infestations are occurring within a number of forested stands. In light of these conditions within the project area there is a need to reduce existing fuel loadings and to improve the health and vigor of existing forested stands.

## Management Direction:

The 1997 Revised Land and Resource Management Plan(Forest Plan), as amended (the Record of Decision for the Phase II Forest Plan amendment was signed on October 31, 2005 and this direction became effective on February 28, 2006) provides direction for the management of the forest. The Forest Plan contains management Goals and Objectives, Management Area direction, and identifies desired future conditions for the forest. Resource specialists reviewed the current condition of the project area and compared these conditions with the desired conditions identified in the Forest Plan, as well as other applicable goals and objectives. Opportunities for improvement were identified.

Management areas spatially define where differing kinds of resource and use opportunities are available to the public and where different management practices may be carried out. The project area contains three management area (MA) designations: MA 5.1; Resource Production Emphasis, MA 5.4; Big Game Winter Range Emphasis, MA 3.7; Late Successional Forest Landscapes.

*Management Area 5.1, Resource Production:* lands are managed primarily for wood products, water yield, and forage production while also providing other commercial products, visual quality, diversity of wildlife and a variety of other goods and services.

*Management Area 5.4, Big Game Winter Range:* lands are managed to provide high-quality winter and transitional habitat for deer and elk, high-quality turkey habitat, habitat for other species, and a variety of multiple uses.

*Management Area 3.7, Late Successional Forest Landscape:* lands are managed to feature stands of trees that contain late successional forest structure across a landscape.

**Table 1.** National Forest management area acreage/percent within the Hell Canyon Maintenance Burn project area

<b>Management Area</b>	<b>Emphasis</b>	<b>Acres</b>	<b>Percentage of Project Area</b>
5.1	Resource Production	1,028	6%
5.4	Big Game Winter Range	17,213	93%
3.7	Late Successional Forest Landscape	242	1%
	Total (NFS lands)	18,483	100%

Goals within the Phase II amendment of the Forest Plan were used to develop the proposal for the Hell Canyon Maintenance Burn project. This project addresses different goals to various extents, but will focus on Goal 10 and Goal 11. Goal 10 states, "Establish and maintain a mosaic of vegetation conditions to reduce occurrences of catastrophic fire, insect, and disease events, and facilitate insect

and disease management and firefighting capability.” Goal 11 States, “Enhance or maintain the natural rate of recovery after significant fire and other natural events while maintaining a mosaic of fuel-loading conditions to facilitate future fire suppression activities.

Objectives associated with these goals that pertain to this project include:

Objective 10-01: Manage for 50 to 75 percent moderate-to-low fire hazard in the wildland-urban interface and reduce fire hazard within proximity of structures to current NFPA standards except in Management Area (MA) 1.1 Black Elk Wilderness, MA 2.2 Research Natural Areas, MA 3.1 Botanical Areas, MA 4.2B Peter Norbeck Scenic Byway, and MA 5.4A Norbeck Wildlife Preserve. Manage the remainder of the Forest for 50 percent moderate-to-low fire hazard except in MA 1.1 Black Elk Wilderness, MA 2.2 Research Natural Areas, MA 3.1 Botanical Areas, MA 3.7 Late-Successional Forest Landscapes, MA 4.2B Peter Norbeck Scenic Byway, and MA 5.4A Norbeck Wildlife Preserve.

10-04. Reduce or otherwise treat fuels commensurate with risks (fire occurrence), hazard (fuel flammability), and land and resource values common to the area, using the criteria in Forest-wide Guideline 4110.

10-07. Where outbreaks of mountain pine beetle could present risks to management objectives for ponderosa pine, reduce acreage of ponderosa pine stands that are in medium or high risk for infestation.

11-02. Achieve a fuel-loading mosaic within 3 to 5 years and reassess as conditions change over time.

Existing Conditions:

The following table displays existing cover types of National Forest land and approximate acreage/percent within the project area.

Table 2. National Forest cover types within the project area

Cover Type	Acreage	Percentage
Meadow/Grasslands	1,759	10
Shrubs	64	>1
Aspen	243	1
Ponderosa Pine	16,402	89
Non-Forest (rock, etc.)	15	>1

This table shows approximate acreage of structural stages by cover type on National Forest land within the project area.

Table 3. Structural stages (SS) present within the project area

Cover Type → Structural Stage ↓	Ponderosa Pine	Aspen	Meadow	Shrub	Rock	Total
Meadow/grassland			1,740			1,740
Non-SS acres				64	15	79
SS1	12,959	243				13,203
SS2						0
SS3A						0

SS3B	1					1
SS3C						0
SS4A	2,541		18			2,559
SS4B	901					901
SS4C						0
SS5						0
TOTAL	16,403	243	1,759	64	15	18,483

**Proposed Action:**

A proposed action results from a thorough analysis of the desired and existing conditions of the area. The team proposes the following treatments in order to fulfill the purpose of and need for the project. For vegetation treatment definitions, see Table 5.

Table 4. Commercial and Non-Commercial Treatments within the project area

Commercial Treatments	Acres
Overstory Removal (OR)	308
Commercial Thin 60 (CT60)	904
Commercial Thin 50 (CT50)	337
Shelterwood Seedcut (SWSC)	96
POL Thinning*	1,281
<b>Total Acres</b>	<b>2,926</b>
Non-Commercial Treatments	
Pine Encroachment (PE)	159
Deadfall Treatment	530
Pre-Commercial Thin (PCT)	308
Prescribed Burning	16,986
<b>Total Acres</b>	<b>17,983</b>

\*POL Thinning may be accomplished in conjunction with the Commercial Thinning.

Table 5. Vegetation Treatment definitions

Vegetation Treatment	Definition and Objective
CT Commercial Thinning	Thinning of immature stands generally 7-12" in diameter. Objective is to reduce basal area in stands to improve health, tree vigor, and future growth capacity of the stand and to reduce susceptibility to mountain pine beetles. Commercial thinning would reduce the basal area (BA) to 50 or 60 or ft <sup>2</sup> /ac depending upon existing and desired condition of the stands and their proximity to private land
POL Products Other than Logs Thinning	Commercial thinning of dense stands of pine in the 7-inch to less-than-9-inch diameter classes. Stands of trees where this treatment is prescribed contain smaller-diameter trees than stands with a standard commercial thin prescription. The objective is to reduce stand density to concentrate future growth on the most desirable trees. Trees in these stands will only be removed if they meet the

	merchantability specifications for commercial timber, which is an 8-foot piece with a 6-inch dib (diameter inside bark) top. Trees that do not meet this merchantability specification may be thinned after the initial harvest in order to reach the desired tree spacing.
SWSC Shelterwood Seed cut	Even-aged regeneration cutting in mature stands. The most desirable seed trees are retained at basal areas of 30-50 ft <sup>2</sup> /ac. Opening the canopy creates a favorable growing environment for pine regeneration.
OR Overstory Removal	Removal of mature to over-mature overstory trees in stands which have been successfully regenerated.
PE Pine Encroachment	Removal of pine trees from existing meadows. Only non-commercial sized trees shall be removed. Meadow cover-type is maintained.
Prescription Burning	Management-ignited fire used for reducing unnatural fuel loading in order to change fire behavior for wildfire which can reduce risks to life and property associated with wildfire. The objective of using prescribed fire in this project is to consume a portion of the dead/down fuels as well as scorch and kill a portion of the green trees to decrease fire behavior. This treatment creates a mosaic of burned and unburned areas which results in an appearance of a naturally-burned landscape.
Precommercial Thinning	A thinning that does not yield trees of commercial value, usually designed to improve tree spacing.
Deadfall Treatment	Mechanical treatment of existing slash to within 18-24 inches of the ground. May include but not limited to lopping, chipping, crushing, piling and burning, or mastication.

### Decision To Be Made:

After reviewing the proposed action and all alternatives, the environmental analysis, and considering additional public comments, the Responsible Official will reach a decision that is in accordance with the Purpose of and Need for this project.

The decision will include, but not be limited to:

- Whether or not to undertake mechanical vegetation treatments
- Whether or not to undertake prescribed burning treatments
- Determining which actions are appropriate

### How You Can Help:

The Hell Canyon District would appreciate any comments or concerns you might have regarding this proposal. Your input will help us to identify significant issues related to the proposed action. In order for suggestions to be most useful to the planning team, please submit your comments no later than thirty days from the date of this letter.

You may send a letter, call or send us an email. We will be considering your comments to develop alternatives, design resource protection measures and analyze the possible effects of these actions in a draft environmental analysis. We will keep you informed of the status of the Hell Canyon

Maintenance Burn project if you submit comments or if you simply request to be apprised of its progress.

All comments received will be considered. Please submit your comments to the address listed below:

*Written comments to:*

Hell Canyon Ranger District  
330 Mt. Rushmore Rd.  
Custer, SD 57730  
Attn: Gwen Lipp

*Phone:* 605-673-4853 (ask for Gwen Lipp)

*FAX:* 605-673-5461 Attn: Gwen Lipp

*Email:* Electronic comments may be sent to [comments-rocky-mountain-black-hills-hell-canyon@fs.fed.us](mailto:comments-rocky-mountain-black-hills-hell-canyon@fs.fed.us). The subject line of e-mailed comments must include "Hell Canyon Maintenance Burn". Electronic comments must be readable in Word, rich text or .pdf format.

Thank you for your participation!

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