

Black Hills National Forest

Fire and Fuels Management



Bald Carnegie Prescribed Burn (October 2005)



Ricco Fire (July 2005)

PRESCRIBED FIRE INFORMATION GUIDE

PRESCRIBED FIRE: *IMPROVING THE HEALTH OF OUR FORESTED ECOSYSTEM*

Fires burn in forests and rangeland, playing a vital ecological role in keeping land healthy. Fire reduces dead vegetation, replenishes nutrients in the soil, stimulates new growth, and maintains biological diversity. Over time a mix of forest management practices, fire suppression, and recently – drought, has led to overcrowding of vegetation and plants and shrubs that may not be ecologically adapted to live with fire. As a result, our forests are now conducive to large, severe wild land fires. Prescribed burns allow fire managers to reintroduce fire under a more controlled environment, usually in the spring or fall, to lower fire intensities and produce fire effects that are more desirable to land managers and the public. Once completed, the prescribed burn area will also serve to lessen fire intensities from naturally ignited fires such as lightning and provides fire managers more options when suppressing future fires.

In the Black Hills, public land managers have been reducing accumulations of hazardous fuels that lead to large, severe wild land fires through the use of mechanical treatment and prescribed fire. Reducing hazardous fuels through prescribed fire and other tools is a key component of the National Fire Plan. This plan is an interagency strategy, developed by the Departments of Agriculture and Interior, to respond to severe wild land fires, reduce fire's impacts on rural communities, and to assure sufficient firefighting capacity in the future. The National Fire Plan, as well as other legislation such as the Healthy Forest Restoration Act, provides direction for land managers to reduce fuel concentrations and threats of uncharacteristic wildfires in the Wildland Urban Interface.

The last six years, substantial progress has been made implementing prescribed fire projects and mechanical fuels reduction treatments within the urban interface mix. Mechanical fuels reduction involves removal or shredding of dense stands of trees. The Forest Service utilizes private contractors with machines that use special attachments that fragment the trees and reduce slash accumulations that can lead to more intense fires. Mechanically thinning trees will remove ladder fuels that reach into the canopies of the older trees. Removing ladder



fuels will decrease torching of trees and ultimately crown fires. Mechanical fuels treatments are conducted near private property where prescribed fire may be too risky.

Prescribed fires have proven to be very successful in creating the conditions necessary for healthy forests, but there is the troublesome side of smoke. To minimize the impacts of smoke, land managers work closely with the South Dakota and Wyoming Department of Environmental Quality, the National Weather Service, and adjoining ranger districts when implementing prescribed fires.



Before every prescribed fire, burn personnel call the National Weather Service with on-site weather conditions and request a spot weather forecast. This forecast allows fire managers to determine whether they will burn or not based on site specific weather forecasts.

This forecast includes temperatures, relative humidity, winds, and smoke dispersal. Typically, the Forest Service will only burn when the smoke dispersal rating is fair or better. A rating of fair or better allows smoke to rise higher in the atmosphere and allows upper air winds to disperse smoke. Yet even in favorable conditions, the air will still become smoky. Although the air is smoky, it still meets federal and state air quality standards.

Smoke will also be seen this winter when the snow flies. Currently, the Black Hills National Forest has several hundred acres of hand and machine piles that will also be burned. Thinning and hand piling is chosen when forest aesthetics is important because fire crews can selectively leave the largest, healthiest trees and pile the downed and dead woody material.



Ladder fuels can make broadcast burning dangerous



Area after selective thinning and piling

When a natural ignition does occur, this treatment effectively removes ladder fuel, which reduces the chance of trees torching and initiating crown fire. Removing woody debris on the forest floor helps firefighters because it slows fire's rate of spread and reduces the flame length so initial attack forces have increased suppression options (i.e. engines, hand line, dozer line) to safely and effectively manage the incident. Hand piles are typically created near structures where prescribed broadcast burning is too risky.



North Zone Fire Management consists of two ranger districts on the northern tier of the Black Hills National Forest. The Bearlodge Ranger District encompasses much of the Wyoming side of the Black Hills and the Bearlodge Mountains in northwest Crook County Wyoming. The Northern Hills Ranger District follows the

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Central Zone Fire Management consists of one ranger district in the central part of the Black Hills National Forest. The Mystic Ranger District lies mostly in Pennington County, and lies adjacent to Rapid City and extends West of Deerfield Lake Recreation Area.

South Zone Fire Management consists of one ranger district in the southern part of the Black Hills National Forest. The district encompasses the Black Elk Wilderness, and extends west to the Wyoming/South Dakota state line. The district covers Elk and Pilger Mountain in the west portion and on the east butts up against Custer State Park and Wind Cave National Park and extends south to Angostura Reservoir.

This fall, starting in mid-September, all zones have burns that are planned and depending on conditions, could possible burn. The North Zone of the Black Hills will focus efforts on the Limestone, Picnic/Cavern/Kine, Slez and Sundance Prescribed Broadcast Burns. All four of these areas have been identified and cleared for treatment utilizing direction from the National Fire Plan and focus on treating forested land around the wildland urban interface.

On the Northern Hills Ranger District, smoke from slash pile burning will be seen in the Spearfish Canyon area, Beaver Park fuel breaks along Forest Roads 139 and 169, Crook Mountain south of Whitewood, Lawrence County Road 044 south of Deadwood and east of Highway 385, and near the O'Neil Pass area. The Bearlodge will be burning slash piles in the Snapper Timber Sale in the Blacktail Drainage, Wish Timber Sale near the Black Buttes – east of Highway 585, and just above the Vista West Subdivision near Reuter Campground.

The Mystic Ranger District has two burns planned which include Bullock 2 and Pole Creek. Both of these areas have been identified and cleared for treatment utilizing direction from the National Fire Plan and focus on treated forest land around the wildland urban interface. Mystic will also be burning numerous machine and hand piles across the district this winter.

The Hell Canyon Ranger District has two burns, which include Thumb and Martin. These two areas have been identified and cleared for treatment utilizing direction from the National Fire Plan and focus on treated forest land around the wildland urban interface.



Time sequence of the Horse-Nugget prescribed fire; Pre, post, and four years later. Notice the reduction of ground fuels and thinning of the pine regeneration.

MYSTIC RANGER DISTRICT:
PRESCRIBED FIRE PROJECTS
FISCAL YEAR 2010

PROJECT NAME	PLANNED ACRES	TARGET DATE
Bullock 2	870	November-June
Pole Creek	3075	November-June



Broadcast burning reduces fire hazard by consuming woody debris. This picture is from the Medicine Prescribed Burn of March, 2004 on the Mystic Ranger District. Prescribed Fire is the most economical and effective treatment land managers use to reduce fire hazard across the Black Hills landscape. Prescribed fire is able to efficiently treat areas that are too steep and rocky for mechanized logging equipment or too

expensive to cut and pile by hand. Once the woody debris is consumed by prescribed fire, the treated area typically remains safe from high-intensity wildfire for up to twenty years. Pictured below is the Medicine Prescribed Fire of November, 2004. The area near the ridge top had never been mechanically thinned on account of the rough terrain. In a few hours of prescribed burning, fire hazard was significantly reduced on roughly four hundred acres of forest. Accomplishing the same task by piling up the material by hand and then burning the piles would have taken a large crew several months to complete at a much higher cost.



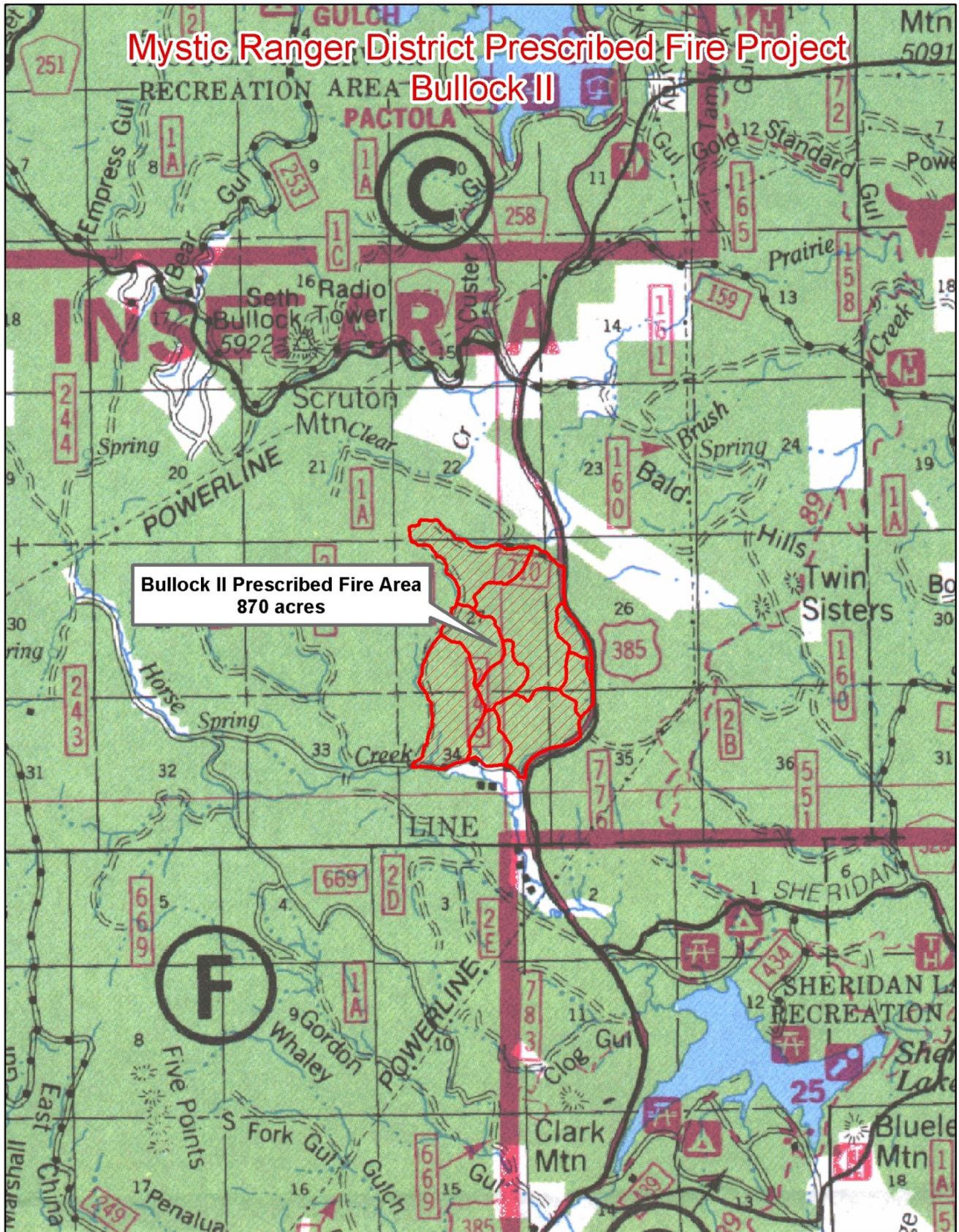
Bullock II Prescribed Fire

- Information Contact: Terry Tompkins
605/343-1567
- Target Date for Burn: December 1-June 20
- Location: 5 miles northeast of Hill City (T1N, R5E & T1S, R5E).
- Project Size: 870 Acres
- Description: The goal of the Bullock 2 Prescribed Fire is to reduce the accumulation of forest litter, and to open up the pine stand. The desired end state will be an open pine forest that produces high-quality forage for wintering game and remains safe from stand-replacing wildfire for up to twenty five years.

POLE CREEK PRESCRIBED FIRE

- Information Contact: Terry Tompkins
605/343-1567
- Target Date for Burn: December 1-June 20
- Location: 13 miles west of Hill City (T1S, R2E, & T1S, R3E)
- Project Size: 3075 Acres
- Description: The goal of the Pole Creek Prescribed Fire is to reduce accumulations of logging slash and bug-killed timber in order to return the inorganic and organic chemicals in the foliage and small woody material to the soil, to reduce fire hazard, and to provide seed beds for natural regeneration. The proposed action will also benefit wildlife by improving plant vigor and diversifying the composition of plant species.

Mystic Ranger District Prescribed Fire Project Bullock II



Mystic Ranger District Prescribed Fire Project Pole Creek



