

Record of Decision

Citadel Project Area Final Environmental Impact Statement

USDA Forest Service
Black Hills National Forest
Northern Hills Ranger District
Lawrence County, South Dakota

Background

The Citadel project area covers a total of 32,217 acres including approximately 28,135 acres of National Forest System (NFS) land and approximately 4,082 acres of interspersed private land. The project area is located immediately south and southwest of Spearfish, South Dakota and is bordered by the Wyoming-South Dakota state line to the west. The legal description of the project area is:

Table 1. Citadel Project Area Location

Citadel Project Area Location Legal Description		
Township	Range	Sections
4 North	1 East	4,5,6
5 North	1 East	1,2,3,4,5,6,7,8,9,10,11,12,14, 15,16,17,18,19,20,21,22,28,29, 30,31,32,33
5 North	2 East	3,4,5,6,7,8,9,10,11,14,15,16,17
6 North	1 East	10,14,15,19,20,21,22,23,24,25, 26,27,28,29,30,31,32,33,34,35,36
6 North	2 East	19,20,26,27,28,29,30,31,32,33, 34,35
Black Hills Meridian		

The primary travel routes through the project area are Forest System Roads (FSR) 134 (Tinton Road), 214 (Higgins Gulch Road), and 222 (Beaver Creek Road). Private land within the project area is mostly undeveloped although a new subdivision is being constructed along FSR 134 near the northern boundary of the project area. Other vacation homes, ranches and year-round homes are scattered across the area. The Citadel project area contains approximately 11 miles of snowmobile trails, which are open seasonally from December 15 to March 31 and are a popular draw for winter recreation. The entire Crow Peak trail system is located within the project area, and its proximity (within two miles) to Spearfish makes it a popular hiking destination. Portions of the Big Hill and Old Baldy trail systems are also located in the project area and are used for both hiking and cross country skiing.

The Citadel project area is comprised of the following six Management Areas (MA):

MA 3.1 (Botanical Areas) – 4,130 acres
MA 3.32 (Backcountry Non-motorized Recreation Emphasis) – 945 acres
MA 4.1 (Limited Motorized Use and Forest Product Emphasis) – 915 acres
MA 5.1 (Resource Production Emphasis) – 845 acres
MA 5.4 (Big Game Winter Range) – 9,018 acres
MA 5.6 (Forest Products, Recreation and Big Game Emphasis) – 12,282 acres

The majority of the forested acres in the Citadel project area are ponderosa pine (24,144 acres). Other cover types include 2,055 acres of aspen, 998 acres of bur oak, 55 acres of other hardwoods, 477 acres of paper birch, and 41 acres of white spruce. There are numerous small inclusions (10 acres and less in size) of oak, aspen and other hardwoods well distributed throughout the area. These are usually very productive pine sites where pine will eventually take dominate the stand if no treatment is done. In addition, there are 365 acres of grassland. Some of these areas also have pine encroaching into them.

The purpose of and need for action in the Citadel project area is to reduce the risk of large, high-intensity fires, reduce the potential for epidemic mountain pine beetle infestation, and to provide for a diversity of wildlife habitat while providing commercial timber to local industry.

Decision

This Record of Decision (ROD) documents my decision and reasons for the decision. The Citadel project purpose and need provides the focus of and scope for the proposed action and alternatives under the direction of the 1997 Revised Black Hills National Forest Land and Resource Management Plan, as amended by the 2006 Phase II Amendment (Forest Plan). Forest Plan direction is summarized in Chapter 1 of the Citadel Final Environmental Impact Statement (FEIS). Given the purpose and need, I have reviewed the alternatives and analysis disclosed in the FEIS, the issues identified during public scoping, information contained in the project record, Forest Plan direction, and public comments received on the Draft EIS. Based on this review, I have decided to implement Alternative C with modifications, including all post-sale projects as funding allows. The reasons for selecting Alternative C are explained under Rationale for Selected Action, presented later in this ROD. The modifications to Alternative C are described under Modifications to Alternative C below.

Alternative C was developed following the public scoping period in response to two issues raised: reduction of fire hazard in wildland urban interface (WUI) areas and availability of wildlife habitat. This alternative features more prescribed burning than the proposed action (Alternative B) and a wider variety of silvicultural treatments designed to create greater structural diversity across the project area. Alternative C would commercially harvest approximately 47 million board feet (MMBF) of sawtimber from approximately 12,190 acres. Prescribed burning would be conducted on a total of 13,675 acres, including areas that are burned following thinning and areas where no prior thinning is proposed (broadcast burning). Map 1 (attached) displays the planned vegetative and fuels treatments while Map 2 shows the associated road construction or decommissioning activities for the selected alternative.

Modifications to Alternative C were made to incorporate new information obtained during field verification activities. The modifications are minor in scope because they would not increase the treated acreage and would include relatively minor relocations of required roads. All planned actions included in Alternative C were analyzed and effects disclosed under the Citadel FEIS. In addition, each interdisciplinary team specialist reviewed the modifications to Alternative C and

determined that the effects are within the scope of those disclosed in the Citadel FEIS. I believe the information contained within the analysis is sufficient to understand the effects of implementing Alternative C with modifications.

Modifications to Alternative C

I am modifying Alternative C so that the project more accurately reflects current ground conditions. The following changes modify the silvicultural prescriptions of selected stands to reflect the type of treatment that is most feasible and beneficial for each stand. These modifications are based on field verification efforts that were conducted after the release of the Citadel DEIS. These changes do not propose treatments in new areas not analyzed in the DEIS. Rather, the modifications change the method in which some stands that were already proposed for treatment are harvested. Overall, these modifications will lead to 388 fewer acres being harvested. Also, upon ground verification it was discovered that some of the proposed new roads were either not necessary or required relocation to most efficiently access harvest units. A description of the modifications to Alternative C follows:

Road System Changes

- 6 new roads (N6, N7, N8, N10, N14, and N15) will be dropped. The total length of dropped new roads is 4.8 miles. See attached Map 2 for road locations.
- 8 new roads and 5 new converts (existing non-system roads that will be added to the National Forest System) will be added. The total length of roads added to the system will be 6.9 miles. All new roads and new converts will be closed following timber harvest. See attached Map 2 for road locations.
- The net change in road mileage between the original Alternative C and the modified version is +2.1 miles.

Table 2. Road System Changes

DEIS Proposed Road to be Dropped	New Proposed Road(s)
N6	New 5, New 6, New Convert 1, New Convert 2
N7	New 7
N8	New Convert 8
N10	New 10
N14	None
None	New 2, New 2A, New Convert 3, New 3, New Convert 4, New 4
N15	None

Silvicultural Prescription Changes

Silvicultural prescriptions will be changed for the following stands:

Table 3. Silvicultural Prescription Changes

Stand ID	Management Area	Original Prescription	Modified Prescription	Acres	Existing SS
070804 40	5.6	Overstory Removal	Hardwood Enhancement	26	4C
070805 7	5.6	Uneven Age Management	No Treatment	226	4A
070805 8	5.6	Uneven Age Management	No Treatment	16	4C
070805 10	5.6	Uneven Age Management	No Treatment	71	4B
070805 12	5.6	Uneven Age Management	No Treatment	32	4C

070805 29	5.6	Uneven Age Management	No Treatment	35	4B
071002 23	5.4	Overstory Removal	Hardwood Enhancement	34	4A
071002 26	5.4	Commercial Thin to 60 BA	Seed Cut	19	4B
071002 27	5.4	Commercial Thin to 40 BA	Seed Cut	30	4B
071002 36	5.4	Commercial Thin to 60 BA	Overstory Removal	25	4B
071002 39	5.4	Commercial Thin to 60 BA	Commercial Thin to 40 BA	8	4C
071002 59	5.4	Commercial Thin to 60 BA	Seed Cut	15	4B
071002 71	5.4	Overstory Removal	Hardwood Enhancement	6	4C
071002 73	5.4	Commercial Thin to 60 BA	Commercial Thin to 40 BA	6	4B
071002 76	5.4	Commercial Thin to 60 BA	Commercial Thin to 40 BA	6	4B
071005 53	5.6	Overstory Removal	No Treatment	8	4A
071005 57	5.6	Commercial Thin to 60 BA	Overstory Removal/Hardwood Enhancement	15	4B
071103 28	5.4	Overstory Removal	Commercial Thin to 40 BA	58	4B
071103 44	5.4	Overstory Removal	Seed Cut	32	4B
071104 25	5.4	Commercial Thin to 60 BA	Seed Cut	131	4B
071105 62	5.4	Commercial Thin to 40 BA	Overstory Removal	38	4B
071105 74	5.4	Commercial Thin to 40 BA	Overstory Removal	42	4C
071107 22	5.4	Overstory Removal	Commercial Thin to 40 BA	27	4C

Summary: These changes affect 23 stands, totaling 906 acres (less than 3% of the project area). Prescription changes for 15 stands (571 acres) would involve removing less of the forest cover. Prescription changes for 8 stands (335 acres) would involve removing more of the forest cover. All changes are the result of field verification efforts that indicate the initial prescription was inappropriate for actual conditions on the ground.

In addition, clearcut treatments along FSR 222.1 will be designed to adhere to forest wide implementation guidelines to mimic natural transition areas between forested and open environments typically found on the landscape.

All references to Alternative C from this point forward in this ROD refer to the modified alternative described above.

Planned Actions

Vegetation Treatments

Commercial Thinning

Commercial thinning involves removal of mature pines to reduce stocking levels in overstocked stands. Doing so will result in increases in the growth rate and quality of the remaining trees. The remaining trees would be left at a basal area between 20 and 60, depending on the stand. Commercial thinning to 20 BA is proposed to provide open grazing areas for wildlife and to provide an overall diversity of potential habitat. Conifers may be removed from within and up to 30 feet from the edge of aspen pockets greater than ¼ acre in size. Alternative C proposes this treatment on a total of 6,569 acres. Pre-commercial thinning and prescribed burning may follow the initial treatment.

Commercial Seed Cut

Commercial seed cut involves thinning overstory trees to create optimal regeneration conditions. The best formed overstory trees would be retained at approximately 30 square feet of basal area (~35 foot spacing). Whole tree logging is the preferred method to achieve light ground disturbance, opening up mineral soil for seedling establishment. Alternative C proposes this

treatment on 831 acres. Pre-commercial thinning and prescribed burning may follow the initial treatment.

Commercial Overstory Removal

Commercial overstory removal involves removal of the overstory trees to accelerate the growth of the regeneration established in the understory. This treatment provides commercial sawtimber and releases stands where growth has become stagnant. Whole tree logging is the preferred method in stands adjacent to private land to reduce fuels. This treatment is proposed for 2,147 acres in Alternative C. Pre-commercial thinning may follow the initial treatment. Alternative C would also allow for prescribed burning to follow the initial treatment on 189 acres.

Commercial and Non-commercial Hardwood Enhancement

Commercial and non-commercial hardwood enhancement involves removing conifers >9" dbh to maintain and encourage growth of aspen. Whole tree logging is the preferred method. This treatment is proposed for a total of 853 acres (428 acres commercial treatment and 425 acres of non-commercial treatment) under Alternative C.

Commercial Clearcut Harvest

Clearcut harvest involves removal of all trees within a stand. This treatment is proposed for 82 acres under Alternative C to improve the balance of structural stages in the project area and to maintain some oak stands. The alternative would also allow for prescribed burning in pine stands following the initial treatment to help maintain Structural Stage 1 conditions. Timber production would be forgone on these sites until regeneration and subsequent growth occurs.

Commercial Uneven Age Management

Uneven age management involves removing trees either singly or in small groups (generally <1/2 acre in size) depending on site conditions. This treatment is designed to mimic small-scale natural disturbances. By creating small openings scattered across an otherwise dense, even-aged forest, we can create structural diversity across the landscape and encourage regeneration in the cut areas. Alternative C originally proposed this treatment for 380 acres, however; field verification by silvicultural experts determined that the stands proposed for uneven-age management already displayed many of the characteristics of an uneven-age stand. Therefore, it was decided not to treat those stands. Alternative C as modified does not include uneven age management.

Pre-commercial Thinning

Pre-commercial thinning involves removal of pine saplings to reduce stand density, improve growth, preclude stand stagnation, and reduce continuity of fuels. Standing stems less than 9 inches diameter would be reduced so that stand density was 200-400 stems per acres (~12 foot spacing). Cut material would be lopped and scattered across the stand to retain nutrients on the site. Alternative C proposes this treatment for a total of 1,602 acres. In addition, Alternative C would allow for prescribed burning following initial treatment on up to 802 acres to hasten fuel decomposition and reduce fire risk. Burn intensities would be kept low to minimize the risk of mortality for overstory trees.

Meadow Enhancement

This treatment involves removal of pine in historic meadow areas to increase vegetative diversity and grass production in meadow communities. Alternative C proposes meadow enhancement for 106 acres.

Prescribed Burn

Prescribed fire can be used as a treatment to achieve a variety of objectives. Performed in the absence of other treatments, prescribed burning can help create forest conditions that mimic natural fire regimes by consuming ground fuels and removing lower branches of trees. As a follow-up treatment to thinning, it can also reduce surface fuels, diversify stand structure, and increase stand resistance to wildfire by slowing development of ladder fuels. Alternative C would allow for prescribed burning on a total of 13,675 acres and would be the sole treatment planned for 5,202 of those acres. Both low- and moderate-complexity burns are proposed. Fire lines and a detailed prescribed burn plan would be required for moderate complexity burns. Existing roads may serve as firelines. A prescribed burn plan would be prepared for low-complexity burns, but constructed fire lines may not be necessary if burning is conducted in winter.

Transportation System and Travel Management

The activities proposed under Alternative C will require the construction of approximately 16.8 miles of new roads and the conversion of 5.6 miles of existing non-system roads to National Forest System roads. The total mileage of roads added to the system would be 22.4. All new roads and new converts will be closed upon the completion of treatment activities. In addition, approximately 34.6 miles of existing roads will require reconstruction and approximately 26.4 miles will require pre-use maintenance. Alternative C will close approximately 30.3 miles of non-system roads. Access to private land and for permitted special uses will not change.

Main system roads currently open to vehicle traffic will remain open with the exception of those listed under *Watershed Projects* below. Travel management decisions will be revisited during the ongoing Forest-wide Travel Management Plan process.

Designated snowmobile routes will be closed to log hauling during the snowmobile season (December 15-March 31). If hauling occurs on routes that intersect a snowmobile trail, temporary stop signs will be placed at all four points of the intersection.

The Dakota 50 is an annual race/tour conducted by a local mountain biking club. The course for the race begins in Spearfish, South Dakota, continues south and then loops back and also finishes in Spearfish. As the name suggests, the entire length of the loop course is approximately 50 miles. The course traverses NFS roads, non-NFS roads, and non-system trails. A relatively small portion of the course crosses the Citadel project area; most of it lies to the east. To protect the integrity of the course, none of the non-system roads or trails that comprise the Dakota 50 trail would be decommissioned under this EIS. A 50-foot non-harvest buffer would surround the trail to maintain scenic integrity and the current structure of the course. A short section (approximately ½ mile) of the trail near Citadel Rock would need to be rerouted due to hydrology concerns associated with the current route location, which is adjacent to a stream. Management actions carried out adjacent to the trail would avoid placing piles of debris across, or otherwise blocking, the trail.

Watershed Projects

Two segments (approximately 0.9 miles total) of existing NFS roads would be decommissioned and recontoured, as Knutson-Vandenburg Act funding allows, reducing long-term impacts on nearby streams. The roads proposed for decommissioning are FSR 131.2A (0.3 miles), which crosses Chicago Gulch, and FSR 626.1C (0.6 miles) near Citadel Rock. These roads have not been maintained for many years and are severely damaged, which is causing significant resource damage to adjacent streams.

Table 4. Proposed Activities

Vegetation and Fuels Treatments	Alternative C
Commercial thinning followed by pre-commercial thinning and prescribed burning (acres)	6,569
Commercial seed cut followed by pre-commercial thinning and prescribed burning (acres)	831
Commercial overstory removal followed by pre-commercial thinning (acres)	1,958
Commercial overstory removal followed by pre-commercial thinning and prescribed burning (acres)	189
Commercial hardwood restoration (acres)	428
Commercial uneven aged management followed by pre-commercial thinning and prescribed burning (acres)	0
Commercial clearcut followed by prescribed burning (acres)	82
Pre-commercial thinning (acres)	800
Pre-commercial thinning followed by prescribed burning (acres)	802
Non-commercial hardwood restoration (acres)	425
Non-commercial meadow enhancement (acres)	106
Prescribed burning (acres)	5,202
Total Acres Treated	17,392
Timber Volume	
Sawtimber (board feet)	47,000,000
Total Timber (cubic feet)	113,400
Transportation System (miles)	
Road construction (miles)	16.8
Road reconstruction (miles)	34.6
Road pre-use maintenance or use as is (miles)	26.4
Unclassified roads decommissioned (miles)	30.3

Rationale for Selected Action

A total of three alternatives, including the no action (Alternative A), were analyzed in detail in the Environmental Impact Statement (EIS). Alternative B was the proposed action that was released for scoping. After further review of the issues, analysis and public comments, I have selected Alternative C, which was identified as the preferred alternative in the FEIS. I feel Alternative C best meets the purpose and need for action, management direction and conditions on the ground, and it responds well to the issues and public comments received. In determining which alternative to select for this project, I first considered whether active management is appropriate in this project area, at this time. After reviewing all materials related to this project, including the analysis documented in the FEIS, specialist reports and supporting documents, public input, and Forest Plan direction, I believe active treatment is appropriate and needed in the project area at this time for the following reasons:

- Approximately 76% of the wildland urban interface (WUI) acres in the Citadel project area have a fire hazard rating of high or very high.
- There exists an overabundance of ponderosa pine stands in structural stages 4B and 4C, which limits structural diversity. Ponderosa pine is encroaching upon hardwood and meadow areas, further reducing structural diversity.

- Approximately 80% of the ponderosa pine stands in the project area are at medium or high risk of mountain pine beetle infestation.

Given this information, I believe that active management should be utilized in the project area to reduce fire hazard across the project area, especially near WUI areas, to reduce the risk of epidemic mountain pine beetle infestations and to increase structural diversity to provide a variety of potential wildlife habitat. In addition to vegetative treatments, I also conclude that the existing road density is higher than what is necessary for management and private access needs and that this is an appropriate time to review the road system in the project area. I have concluded that active management is the best course of action for this project and I therefore reject Alternative A – No Action.

The next consideration I had in making my decision was the appropriate level of treatment for this project area. Both action alternatives would meet the purpose and need for action for the Citadel project area to some degree. My decision was based on the balance of resource conditions that best meets the purpose and need while responding to the issues and public comments. My deliberations focused on the four significant issues (fuel and fire hazard reduction, mountain pine beetle risk, wildlife habitat, and commercial timber harvest) and how the action alternatives responded to them while considering public input received on the DEIS.

Fuel and Fire Hazard Reduction

The Forest Plan includes guidance for reducing fire hazard both within and outside of the WUI. Objective 10-01 states: “Manage for 50-75 percent moderate-to-low fire hazard in the wildland urban interface...Manage the remainder of the Forest for 50 percent moderate-to-low fire hazard...” Fire hazard reduction is achieved by removing excess fuel through thinning or prescribed burning.

Alternatives B and C would both result in a substantial reduction of fire hazard within the WUI, although neither would achieve the desired 50-75 percent moderate-to-low value. This is an objective that will need to be achieved over multiple treatments. Currently, only 24% of WUI acres are rated as moderate-to-low fire hazard. The treatments proposed for Alternative B would result in 36% of the WUI acres being moderate-to-low fire hazard and Alternative C would result in 42%. Because of more intensive vegetative treatments and prescribed burns proposed within the WUI, Alternative C moves the project area further toward achieving the Forest Plan objective.

Mountain Pine Beetle Risk

Forest Plan Objective 10-07 calls for reducing acreage of ponderosa pine stands that are at medium or high risk of infestation. Extensive research has shown that overly dense pine stands (120 basal area or greater) are more susceptible to pine beetle infestation. Reducing stand density through commercial and non-commercial thinning is an effective means of reducing pine beetle risk.

Alternative B would thin the same total acres as Alternative C; however, because Alternative C includes more intensive thinning in some stands, it would lead to the fewest acres at high risk. Currently, approximately 10,702 acres of ponderosa pine are at high risk of mountain pine beetle infestation. Alternative B would reduce that number to 8,697 acres and Alternative C would reduce it to 7,759 acres.

Wildlife Habitat

Several factors were used to determine which alternative is most beneficial to overall wildlife habitat in the project area. The first indicator used was structural stage diversity. The Forest Plan includes structural stage guidelines for ponderosa pine in selected management areas across the Forest. Of these MAs, 4.1, 5.1, 5.4, and 5.6 are included in the Citadel project area and, combined, these MAs comprise approximately 71% of the NFS land in Citadel. To compare the alternatives' effectiveness at achieving habitat diversity, I analyzed the resulting structural stages of these four MAs combined. I also considered other factors such as acres of hardwood enhancement, acres of meadow enhancement, acres of south slope or ridgetop treatments, open road density, and impacts on wildlife species that are threatened, endangered, sensitive or a species of local concern.

Both action alternatives would result in similar structural stage percentages, with Alternative B having 1% more in 2, 5% less in 4A, 7% more in 4B, 1% less in 4C and 2% less in 5 with structural stages 1, 3A, 3B, and 3C being identical. Resulting open road density would be identical for each alternative and they are likewise not expected to have an impact on overall populations of any wildlife that is threatened, endangered, sensitive or a species of local concern.

The primary differences between the action alternatives are the treatments specifically designed to benefit wildlife that are included in Alternative C. These include 106 acres of meadow enhancement that is included in Alternative C (as compared to none in Alternative B) and 853 acres of hardwood enhancement in Alternative C versus 135 acres in Alternative B. In addition, Alternative C features 4,306 acres of ridgetop and south slope treatments aimed at improving foraging areas for big game, while Alternative B treats 3,146 acres of ridgetops and south slopes.

Commercial Timber Harvest

The Forest Plan calls for managing the Forest on a multiple-use, sustainable basis; providing timber to industry while considering other resources such as recreation, scenery, and wildlife. Often, timber harvest is conducted in conjunction with achieving other goals, such as reducing hazardous fuels, reducing pine beetle risk, or creating openings for wildlife habitat.

The action alternatives would provide similar amounts of timber. Alternative B would result in the harvest of approximately 46 MMBF of sawtimber, or 109,900 cubic feet (CCF). Alternative C would harvest slightly more: 47 MMBF or 113,400 CCF.

Other Elements of the Selected Alternative

Road construction activities would be nearly identical for each of the action alternatives. Both alternatives would feature the same amount of reconstruction and decommissioning and would result in the same open road densities. The resulting road system provides for both administrative and public access needs and therefore, implementing the specified road activities associated with Alternative C is included as part of my decision on this project.

Post sale projects for commercial and product-other-than-log (POL) thinning, regeneration surveys, vegetation monitoring, site preparation, removal of pines from hardwood stands and meadows, improvement or installation of wildlife structures (guzzlers and bat gates), watershed improvement projects, and noxious weed treatment and monitoring will be implemented as described in the Citadel FEIS.

Other Alternatives Considered

In addition to the selected action, I considered two other alternatives in detail. A brief summary of these alternatives is presented below. Further information on the alternatives can be found in Chapter 2 of the EIS. Table 2 displays a comparison of all three alternatives.

Alternative A (No Action) – The National Environmental Policy Act (NEPA) requires study and use of the no action alternative as a basis for comparing the effects of the proposed action and other alternatives. This alternative assumes no implementation of any elements of the proposed action or other action alternatives. Under the no action alternative no effort to modify existing vegetation or related fuels and habitat conditions in the project area would occur. Actions such as ongoing Forest protection efforts and recurring road maintenance on system roads would continue as directed by the Forest Plan. Actions analyzed under past projects or proposed by future projects may still occur.

Alternative B (Proposed Action) – Alternative B is the proposed action. It was developed in response to the purpose of and need for action. This alternative would modify stand structure across the planning area to reduce the potential for uncharacteristically intense wildfire behavior, reduce fuel loads, reduce the risk of large pine beetle outbreaks, and provide for diverse wildlife habitat. A variety of vegetation management tools, including commercial timber harvest, would be used to thin dense ponderosa pine stands to reduce the risk of pine beetle outbreaks and crown fire hazard. By strategically locating vegetative treatments and prescribed burns across the landscape, the continuity and density of fuels would be modified to reduce the risk of large wildfires while at the same time providing cover and structural diversity for the benefit of wildlife. Harvest methods would include both ground-based and cable systems.

Construction of up to 19 miles of new roads and improvement of 35 miles of existing roads would be necessary to implement the proposed treatments. Under Alternative B, 31 miles of non-system roads would be decommissioned. Off-road motorized travel regulations would not change from their current state. Newly constructed roads would be closed to motorized vehicles following timber harvest.

Table 5. Comparison of Alternatives

	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C (Selected Alternative)
Fuel and Fire Hazard Reduction			
<i>Issue Indicators</i>			
WUI Acres at Very High Fire Hazard (% of WUI Acres)	3,160 (48%)	1,802 (27%)	1,823 (28%)
WUI Acres at High Fire Hazard (% of WUI Acres)	1,856 (28%)	2,450 (37%)	1,902 (29%)
WUI Acres at Moderate Fire Hazard (% of WUI Acres)	614 (10%)	1,363 (21%)	1,777 (27%)
WUI Acres at Low Fire Hazard (% of WUI Acres)	938 (14%)	953 (15%)	1,066 (16%)
Project Area –Acres Thinned	0	12,190	12,190
Project Area –Acres of Prescribed Burning	0	8,952	13,675
Mountain Pine Beetle Risk			
<i>Issue Indicators</i>			

	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C (Selected Alternative)
Total Acres Thinned	0	12,190	12,190
Mountain Pine Beetle Risk ^a – Acres at Low Risk	4,550	6,247	6,146
Mountain Pine Beetle Risk – Acres at Moderate Risk	7,432	7,672	8,698
Mountain Pine Beetle Risk – Acres at High Risk	10,702	8,697	7,759
Wildlife Habitat Diversity			
<i>Issue Indicators</i>			
SS 1 – Grass/Forb (MAs 4.1, 5.1, 5.4, and 5.6)	135 acres 1%	135 acres 1%	209 acres 1%
SS 2 – Shrubs/Seedlings (MAs 4.1, 5.1, 5.4, and 5.6)	444 acres 2%	2,730 acres 14%	2,537 acres 13%
SS 3A – Sapling/Pole <40% canopy cover (MAs 4.1, 5.1, 5.4, and 5.6)	758 acres 3%	617 acres 3%	608 acres 3%
SS 3B – Sapling/Pole 40-70% canopy cover (MAs 4.1, 5.1, 5.4, and 5.6)	148 acres 1%	108 acres 1%	108 acres 1%
SS 3C – Sapling/Pole >70% canopy cover (MAs 4.1, 5.1, 5.4, and 5.6)	310 acres 1%	249 acres 1%	249 acres 1%
SS 4A – Mature <40% canopy cover (MAs 4.1, 5.1, 5.4, and 5.6)	4,202 acres 19%	6,088 acres 31%	6,966 acres 36%
SS 4B – Mature 40-70% canopy cover (MAs 4.1, 5.1, 5.4, and 5.6)	9,274 acres 42%	7,497 acres 39%	6,243 acres 32%
SS 4C – Mature >70% canopy cover (MAs 4.1, 5.1, 5.4, and 5.6)	5,876 acres 26%	1,053 acres 5%	1,191 acres 6%
SS 5 – Late Succession (MAs 4.1, 5.1, 5.4, and 5.6)	1,140 acres 5%	977 acres 5%	1,274 acres 7%
Hardwood Enhancement (acres)	0	135	853
Meadow Enhancement (acres)	0	0	106
South Slope/Ridgetop Treatments (acres)	0	3,146	4,306
Density of Yearlong Open Roads (Miles per Square Mile)	1.2	0.8	0.8
Density of Seasonally Open Roads (Miles per Square Mile)	0.5	0.4	0.4
Effect on Threatened or Endangered Species	No Impact	No Impact	No Impact
Effect on Region 2 Sensitive Species	No Impact	May Impact Individuals; No Trend Toward Federal Listing	May Impact Individuals; No Trend Toward Federal Listing
Effect on Species of Local Concern	No Impact	May Impact Individuals; No Trend Toward Federal Listing	May Impact Individuals; No Trend Toward Federal Listing
Commercial Timber Production			
<i>Issue Indicators</i>			
Sawtimber Harvested (board feet)	0	46,000,000	47,000,000

	Alternative A (No Action)	Alternative B (Proposed Action)	Alternative C (Selected Alternative)
Total Timber (cubic feet)	0	109,900	113,400
Present Net Value	\$0	-\$5,098,797	-\$7,606,081

^aThe values presented here for mountain pine beetle risk represent pine stands for which an insect risk rating was available. The values presented for mountain pine beetle risk for each of the action alternatives account for the conversion of pine stands to other forest cover types.

Public Involvement

Comments on the proposed action, potential concerns, and opportunities for managing the Citadel project area were solicited from members of the public, other public agencies, tribal governments, adjacent property owners, interest groups, and Forest Service specialists. Various methods were used to request comments, including:

- A scoping letter was mailed to approximately 240 interested parties, including adjacent property owners, tribal members, state and federal agencies, and other organizations on May 26, 2006. This letter included a description of the project area, an overview of the planning process, a general explanation of the proposed actions, and an invitation to comment.
- A news release was submitted to the local news media on June 9, 2006. This advertisement introduced the project to the public by providing a description of the project area and an explanation of the proposal. The advertisement also solicited public comment on the project.
- A public open house meeting was held at the Northern Hills Ranger District office in Spearfish, South Dakota, on June 27, 2006. The meeting was attended by 7 interested parties who met with Forest Service officials to view maps of and discuss the proposed actions. Attendees were encouraged to submit comments on the proposed actions or to document their concerns associated with the project area.
- The Notice of Intent (NOI) to prepare an EIS was published in the *Federal Register* on August 2, 2006. The NOI asked for public comment on the proposal through September 1, 2006.
- The Notice of Availability (NOA) of the DEIS was published in the *Federal Register* on June 1, 2007. The NOA announced the availability of the DEIS to interested individuals and initiated the 45-day comment period, which ended on July 16, 2007.
- A legal notice announcing the availability of the DEIS was published in the Rapid City Journal on June 1, 2007. This notice also announced the availability of the DEIS and solicited comments from interested individuals.
- Other information sharing, communication and interaction with interested parties, agencies, and individuals has occurred on a continuing basis during project planning.

A total of 21 comment letters on the Draft EIS were received from individuals, groups, tribes or agencies. A response was developed for each comment letter (see Appendix E of the FEIS). None of these comments generated a need for reanalysis or required major substantive changes in the document.

The Environmentally Preferred Alternative(s)

Disclosure of one or more environmentally preferable alternatives is required [Section 101 NEPA; 40 CFR 1505.2(b)]. The environmentally preferable alternative is not necessarily the

alternative that will be implemented and it does not have to meet the underlying need for the project. It does, however, have to cause the least damage to the biological and physical environment and best protect, preserve, and enhance historical, cultural and natural resources. In the case of the Citadel Project, I have determined that there could be two environmentally preferred alternatives depending on which perspective one takes. From a short-term (less than 5 years), non-disturbance perspective, the No Action Alternative (Alternative A) meets many of the criteria for being environmentally preferred. In the short term, Alternative A provides the most acres for species preferring more mature, dense pine habitat, maintains the highest number of snags for wildlife, and has the least risk of damaging cultural resources. However, it risks long-term negative effects from epidemic mountain pine beetle infestations and high intensity wildfires within this area more than any other alternative. Taking a longer term perspective over the next twenty years, Alternative C (Selected Action) is considered the environmentally preferred alternative. Although some activities generate short-term disturbance related to vegetation management, it reduces significant long-term environmental risks.

Legal Requirements, Regulation, and Policy

Another aspect of the process for selecting an alternative is ensuring that the decision actions comply with all legal requirements and policy. The Selected Action meets the following legal requirements.

Federal Laws

The National Historic Preservation Act of 1966, as amended: All surveyed and inventoried cultural sites considered eligible or potentially eligible for the National Register of Historic Places will be buffered and avoided during resource management activities. New sites discovered during operations will be protected. Any identified Traditional Cultural Properties and sacred areas will be protected. Reference is made to the consultation with the South Dakota State Historical Preservation Officer (SHPO) under State Laws section below.

The National Environmental Policy Act (NEPA), 1969: NEPA establishes the format and content requirements of environmental analysis and documentation. The process of preparing the Citadel Project Area EIS and ROD was completed in accordance with NEPA.

The Endangered Species Act, 1973: A Biological Assessment and a Biological Evaluation have been prepared to document possible effects of any activities on endangered, threatened, proposed or sensitive species in the Citadel project area. A determination was made that planned activities will have “No Effect” on the bald eagle and therefore no formal consultation with the USFWS was required. The Region 2 Sensitive Species list has recently changed. Forest Service Manual direction at #7 under 2672.11, Identification of Sensitive Species, R2 supplement 2600-2006-1 states: “For newly designated sensitive species, current or planned Forest Service actions that are well underway (or are completed) at the time an updated sensitive species list goes into effect are exempt from requirements to conduct a biological evaluation for that species. This exemption is intended to enable actions that have been planned using the previous sensitive species list to go forward....”. The Citadel project was well underway at the time the updated sensitive species list went into effect.

The Clean Water Act, 1982: The Selected Action will meet and conform to the Clean Water Act as amended in 1982. This act establishes a non-degradation policy for all federally proposed projects. The Selected Action is not likely to degrade water quality below standards set by the

State of South Dakota. This will be accomplished through planning, application, and monitoring of Best Management Practices and other mitigations measures and design criteria of project activities.

Clean Air Act Amendments, 1977: The Selected Action will be implemented to meet the National Ambient Air Quality standards through avoidance of practices that degrade air quality below health and visibility standards.

The National Forest Management Act (NFMA) 1976, which amends the Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974: All alternatives were developed to be in full compliance and consistent with NFMA as summarized below.

Consistency with the Land and Resource Management Plan

The NFMA law (16 U.S.C. 1604(i)) requires me to ensure that permits, contracts, cooperative agreements, and other activities carried out on the Black Hills National Forest are consistent with the Forest Plan. My decision is consistent with this direction in that:

- Planned activities will contribute to Forest Plan goals and objectives (FEIS, Chapter 1).
- I have reviewed the BBNF FY 2005 Monitoring and Evaluation Report and Region 2 MIS guidance for projects. The effects of planned activities on management indicator species are consistent with the Forest Plan.
- Planned activities are consistent with management area direction
- Planned activities comply with Forest Plan standards (FEIS, Chapter 2).

Consistency with the National Forest Management Act

The 1982 planning rule has been superseded and is no longer in effect, and a recent court ruling has enjoined the Forest Service from implementing the 2005 planning rule.

The scope of analysis for a Forest Plan's management indicator species is determined by the Forest Plan's management direction, specifically, its standards and guidelines (Chapter II) and monitoring direction (Chapter IV). The Black Hills National Forest Forest Plan (Forest Plan) contains no obligation to conduct project-specific monitoring or surveying for MIS. Phase II ROD, pp. 8, 20; Forest Plan as Amended, pg. I-11, Objective 238. The Forest Plan establishes monitoring and evaluation requirements that do not require population monitoring for MIS, but rather employ habitat capability relationships. Phase II ROD, pp. 20; Forest Plan as Amended, pg. I-11, Objective 238. The Citadel project analyzed the following management indicator species (MIS) because habitat for these species is available in the project area: white-tailed deer, golden-crowned kinglet, black-backed woodpecker, brown creeper, ruffed grouse, and song sparrow.

Alternative C is consistent with the requirements in the Forest Plan because:

- It meets objective 103, for maintaining and improving long-term stream health. Existing stream condition is discussed on pages 3-9 through 3-13 of the FEIS. Direct and indirect effects are discussed on pages 3-20 through 3-24. Cumulative effects are discussed on pages 3-24 through 3-27. Design criteria which will be implemented to maintain and improve long-term stream health are included in Appendix C under the heading "Soil and Water".

- It moves toward meeting Objective 201, managing for a maximum of 92,000 acres of aspen. Alternative C would remove pine from 787 acres of aspen in the project area (pages 2-15 and 3-66, FEIS). Post-harvest projects are included which will remove all non-commercial sized conifers from existing and converted aspen stands (page 2-8, FEIS).
- It is consistent with Objective 238a to maintain or enhance habitat for ruffed grouse, beaver, song sparrow, white-tailed deer and brown creeper. Refer to discussion of Objective 201, above. Alternative C increases meadow acres (objective 205), see pages 2-15 and 3-67 in the FEIS for a discussion on meadows. The FEIS discusses snags (objective 211) on page 3-67 as well as design criteria in Appendix C under the headings “Snags” and “Snags and Down Logs”. Spruce (objective 239-LVD) is discussed on pages 1-11 and 3-72 of the FEIS. Management area objective 5.1-204 is discussed on pages 1-16, 3-37 and 3-38 of the FEIS.
- It is consistent with objective 238b to maintain habitat for black-backed woodpecker. The FEIS discusses the snag objective 211 and standard 2301 on pages 3-73 through 3-74 and 3-82 through 3-84 as well as design criteria in Appendix C under the headings “Snags” and “Snags and Down Logs”. Management area objective 5.1-204 is discussed on pages 1-16, 3-37 and 3-38 of the FEIS.
- It is consistent with 238c to maintain habitat for golden crowned kinglets. Spruce (objective 239-LVD) is discussed on pages 64, 72 and 76 of the EIS.
- It is consistent with Objective 10-07, to reduce acreage of ponderosa pine in medium or high risk for infestation of mountain pine beetle. Refer to pages 2-14, 3-34 and 3-35 for existing condition of mountain pine beetle risk and pages 2-14 and 3-39 for the effects of Alternative C on beetle risk acres.

Alternative C is further consistent with the Forest Plan because it meets the following standards:

- 1101, 1102, 1103, 1301 regarding soil productivity, compaction, erosion, disturbance and stream health. Refer to the soil and water discussion on pages 3-5 through 3-27 of the FEIS, as well as the Design Criteria listed under “Soil and Water” in Appendix C.
- 2205, to remove all conifers from mixed conifer/hardwood stands treated to meet hardwood objective 201. See pages 2-8, 2-15, and 2-66 in the FEIS.
- 2301a, to retain all snags which are not deemed a safety hazard. Refer to design criteria in Appendix C under the headings “Snags” and “Snags and Down Logs”.

My decision also is based upon consideration of the best available science. I have reviewed the record which shows a thorough review of relevant scientific information; a consideration of responsible opposing views; and the acknowledgement of incomplete or unavailable information, scientific uncertainty and risk. Specifically, the record shows that extensive literature citations have been reviewed and considered by resource specialists in preparation of this FEIS as evidenced by the literature cited sections in the specialist reports. In addition, the record shows that no literature was cited by the public during the scoping period and that all literature cited by the public during the comment period has been reviewed and considered by resource specialists on the Citadel IDT. Furthermore, additional references which have become available since specialist reports were completed for this project, such as the Regional conservation assessments for the leopard frog and ruffed grouse, have been reviewed and considered. Each resource specialist has prepared an addendum to their specialist report for the Citadel project which states that they have utilized the best science available to them in preparation of this FEIS.

The NFMA directs the Secretary of Agriculture to establish certain resource management guidelines included in the agency directives system. I find that the activities in this project decision comply with the NFMA law, as follows (supporting documentation is located in the FEIS, Appendix B and in the Silviculture Specialist Report in the project file):

- Irreversible resource damage will not occur. The project will not cause irreversible resource damage, such as to soil productivity or watershed condition (FEIS, Chapter 3).
- Adequate restocking is assured.
- Clearcuts are proposed for 8 separate stands (82 acres total). Clearcutting is the optimum method to achieve the desired result of creating structural stage 1. These areas are not planned to be maintained as openings in perpetuity (FEIS Appendix B, page B-3).
- No timber harvesting will occur on lands not suited for timber production. No harvest will occur for timber production purposes on lands classified as unsuitable for timber harvest.
- No created openings will be larger than 40 acres; the proposed clearcuts range in size from 3-22 acres.
- Culmination of Mean Annual Increment (CMAI) requirements are met.

Other Laws

South Dakota State Best Management Practices (BMP) have been incorporated into project design.

Consultation with the South Dakota State Historic Preservation Officer (SHPO): The SHPO offices have been consulted concerning the proposed activities in the Citadel project area. The SHPO concurred with our determination of “No Historic Properties Affected”. The Advisory Council on Historic Preservation (ACHP) will be consulted about measures to protect significant archeological sites from adverse affects, should any be identified during project implementation.

Administrative Review

This decision is subject to appeal pursuant to 36 CFR 215 (June 2003). A written appeal must be submitted within 45 days following the publication date of the legal notice of this decision in the Rapid City Journal (Rapid City, South Dakota). It is the responsibility of the appellant to ensure their appeal is received in a timely manner. The publication date of the legal notice of the decision in the newspaper of record is the exclusive means for calculating the time to file an appeal. Appellants should not rely on date or timeframe information provided by any other source. Only those organizations or individuals who submitted a comment during the 45-day comment period on the DEIS are eligible to appeal this decision pursuant to 36 CFR 215.13.

Paper appeals must be submitted to:

Black Hills National Forest Supervisor’s Office
Appeal Deciding Officer
Attn: Ed Fischer
1019 N. Fifth Street
Custer, SD 57730
Phone: (605) 673-9200
Fax: (605) 673-9350
Email: appeals-rocky-mountain-black-hills@fs.fed.us

Appeals may be hand delivered to the office address above between the hours of 8:00 AM and 4:30 PM, Monday through Friday, excluding Federal holidays.

For appeals filed electronically the name of the project decision being appealed should appear in the subject line. Electronically filed appeals must be readable in Word, Rich Text or pdf formats. When an appeal is electronically mailed, the appellant should normally receive an automated electronic acknowledgement confirming agency receipt. If the appellant does not receive an automated acknowledgement of the receipt of the appeal, it is the appellant's responsibility to ensure timely receipt by other means (§ 215.15(c)(3)).

It is an appellant's responsibility to provide sufficient activity-specific evidence and rationale, focusing on the decision, to show why my decision should be reversed. At a minimum, an appeal must meet the content requirements of 36 CFR 215.14 and include the following information:

- (1) Appellant's name and address (§ 215.2), with a telephone number, if available;
- (2) Signature or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);
- (3) When multiple names are listed on an appeal, identification of the lead appellant (§ 215.2) and verification of the identity of the lead appellant upon request;
- (4) The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision;
- (5) The regulation under which the appeal is being filed, when there is an option to appeal under either this part or part 251, subpart C (§ 215.11(d));
- (6) Any specific change(s) in the decision that the appellant seeks and rationale for those changes;
- (7) Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement;
- (8) Why the appellant believes the Responsible Official's decision failed to consider the substantive comments; and
- (9) How the appellant believes the decision specifically violates law, regulation or policy.

Notices of Appeal that do not meet the requirements of 36 CFR 215.14 will be dismissed.

Implementation Date

Pursuant to 36 CFR 215.9 (a), if no appeal is filed within the 45-day time period, implementation of this decision may occur on, but not before, the 5th business day following the close of the appeal filing period. If an appeal is received, implementation may occur on, but not before 15 business days following the date of the appeal disposition (36 CFR 215.9(b)).

Contact Person

For additional information concerning this decision or the Forest Service appeal process, contact Rhonda O'Byrne, District Ranger, Northern Hills Ranger District, 2014 North Main Street, Spearfish, SD 57783 or Ed Fischer, Environmental Coordinator, Black Hills National Forest, 1019 North 5th Street, Custer, SD 57730.

Signed: /S/ Rhonda O'Byrne
RHONDA O'BYRNE
District Ranger
Northern Hills Ranger District
Black Hills National Forest

Date: 08/30/07

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