# Citadel Project Area

## Final Environmental Impact Statement

## Appendix E

### Response to Public Comments

The Draft Environment Impact Statement (DEIS) for the Citadel project area was issued for public comment on June 1, 2007. Twenty-one comment letters were received during the public comment period.

Each comment letter has been reviewed. The interdisciplinary team responded to all comments. The following table lists each commenter, contains a paraphrased version of each comment, and provides the response to that comment.

| Comment | Response |
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| **Commenter #1: Ken Rost, District Park Supervisor, SD Dept. of Game, Fish and Parks, 11361 Nevada Gulch Rd., Lead, SD 57754** | |
| Comment 1-1: Our request is that timber harvest and hauling not interfere with the snowmobile trails between Dec. 1st and March 31st… | *Appendix C (Design Criteria and Monitoring), page C-5 of the DEIS addresses harvest restrictions during snowmobile season: "If conflicts appear likely between use of the snowmobile trails and specific logging units or haul routes, logging would be restricted between December 15 and March 31 unless a logical and desirable alternative snowmobile route is identified."* |
| Comment 1-2: …if any burns are to take place in the areas of the snowmobile trails, that we be notified prior to the burn so that markers can be removed. | *This suggestion was added as an additional design criteria to the Final EIS.* |
| **Commenter #2: Steven Handwerker, 7300 W. Camino Rd., Boca Raton, FL 33433** | |
| Comment 2-1: I fully support the preferred action of aggressively managing FOREST HEALTH in the project area….the treatments focusing on reducing fire hazards; maintaining and improving wildlife habitat and thinning pine stands to reduce risk of pine beetle infestation is also good and has my full support….Thank you for protecting, conserving and refurbishing our environment in any and all capacities. | *Thank you for your response. Comment noted.* |
| **Commenter #3: Gary and Ruby Huggett, P.O. Box 7, Roslyn, SD 57261** | |
| Comment 3-1: We are in favor of the Citadel project….Please keep us informed. | *Thank you for your response. Comment noted.* |
| **Commenter #4: Douglas Symonds, 10305 Homestake Rd., Spearfish, SD 57783** | |
| Comment 4-1: I feel that your proposed plan of action needs to be followed. I live next to the area and am quite familiar with the area and the conditions found there. The Citadel project does need a progressive plan of action which can be met through timber management, fuel management and that your present plan would meet these needs in regards to the spreading bark beetle damage and present fire dangers thru timber thinning. Please proceed with your present proposal. | *Thank you for your response. Comment noted.* |
| **Commenter #5: Boyd Larson, 10437 Homestake Rd., Spearfish, SD 57783** | |
| Comment 5-1: We need to continue aggressive logging and thinning to help prevent fires and bug control. Also control burning. | *Thank you for your response. Comment noted.* |
| **Commenter #6: Dave and Suze Hoffman, 20485 Spearfish Canyon, Spearfish, SD 57783** | |
| Comment 6-1: We are concerned about the various | *Alternative A of the Citadel DEIS is the no-action* |

| Comment | Response |
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| proposals for new roads and vehicle access to areas without such access at the present time. We are not in favor of any new road building in the Citadel DEIS area. | *alternative and does not propose road construction.*<br><br>*All new roads proposed under the action alternatives would be closed following harvest activities.* |
| Comment 6-2: Another concern is the planned manipulation of existing forest culture and the subsequent logging and other management practices that would drastically change the current eco balance in the area. We're aware there are an incredible number of old growth trees in the Citadel DEIS area. Many of these trees are in fragile, difficult to access areas with micro environments of their own. Again, we are totally opposed to logging or disturbing these areas or those adjacent to them. | *Alternative C, the preferred action, of the Citadel DEIS does not propose any harvest in stands designated as Structural Stage 5 (late succession or old growth). Alternative A, the no-action alternative, also does not harvest any late succession stands.* |
| Comment 6-3: We hope it is not the intention of the USFS to always bow to the commercial pressure of selling this country's ecological jewels to the highest bidder? Possibly there is someone in the USDA concerned about the longterm ramifications of constantly meddling with this incredibly unique eco paradise? | *The environmental effects of each alternative are analyzed in Chapter 3 of the DEIS.*<br><br>*Irreversible and Irretrievable Commitments of Resources are also discussed in Chapter 3 (Section 3.6, page 3-135).* |
| Comment 6-4: On first glance, it seems to us the Citadel DEIS would have an overall negative impact on our watersheds, wildlife habitat and the biological systems in the area. Leave perfection alone and it can only get more perfect. | *Comment noted.* |
| **Commenter #7: Paul Moss, 1849 Whitaker St., White Bear Lake, MN 55110** | |
| Comment 7-1: Please stop the Citadel timber project. | *Thank you for your response. Comment noted.* |
| Comment 7-2: In a forest that has been logged too many times over the past century (e.g., 25 timber sales since 1983) and which is being stressed by climate change, it doesn't make sense to allow another massive logging project-which will have a net loss to the Forest Service totaling $7.6 million. | *Comment noted.* |
| Comment 7-3: The impacts from further habitat destruction, fragmentation, and new road construction (52 miles), will continue to add pressures to desperately struggling wildlife populations. | *Alternatives B and C propose 18 and 17 miles of road construction respectively (pages 2-2 and 2-4 of the DEIS).*<br><br>*The most recent Black Hills Monitoring Report (FY 2006) does not indicate a negative impact to the overall population of any monitored species.*<br><br>*Chapter 3 of the DEIS discusses the environmental effects of the alternatives with Section 3.4.6 (page 3-65) focusing on wildlife.* |
| **Commenter #8: Russell Eagle Bear, Rosebud Sioux Tribe, P.O. Box 809, Rosebud, SD 57570** | |
| Comment 8-1: As the Tribal Historic Preservation Officer for the Rosebud Sioux Tribe I appreciate your notification of the undertaking and the awareness you are demonstrating for the archaeological sites and cultural heritage of Indigenous peoples. | *Thank you for your response. Comment noted.* |

| Comment | Response |
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| Comment 8-2: In review of the area shown on the accompanying maps of your proposed undertaking we do not have sites listed in our data base. This does not preclude the possibility of a site of heritage importance being located by forest personnel or an archaeological contractor that may have an oral reference among the Rosebud people.<br><br>If sites are to be affected by this undertaking, please notify my office as soon as possible for consultation. | *Design criteria are included to halt activities if new heritage resources are located during project implementation. These design criteria are listed in Appendix C, pages C-2 and C-5.* |
| Comment 8-3: At this time we have no concerns for this project to proceed as planned. | *Comment noted.* |
| **Commenter #9: Doug Anderson, P.O. Box 2, Spearfish, SD 57783** | |
| Comment 9-1: Alternative C (Preferred Alternative) is the best way to tak [sic] care of bug and forest fire problems. This will help with bug tree and clean up the forest so more grass for wildlife and livestock grassing [sic]. | *Thank you for your response. Comment noted.* |
| Comment 9-2: I also think there should be more water pond where the roads are closed for wildlife and livestock. | *This is outside the scope of the Citadel project. Addition of water sources for livestock can be accomplished through site-specific Categorical Exclusions.* |
| **Commenter #10: Cynthia Patterson and Peter J. Schrand, 3122 Enfield Point, Marietta, GA 30068** | |
| Comment 10-1: Please consider these comments opposing the timber project called Citadel. The proposal includes prescribed burning, lumbering and pre-commercial thinning in 28,135 acres of National Forest. The net financial loss to the Forest Service is $7.6 million. The Black Hills National Forest has had 25 timber sales since 1983. The forest and wild life are stressed by climate change. The proposed logging includes 52 miles of roads, which fragments and destroys habitat.<br><br>National Forests belong to all citizens. We do not want these trees to be cut down by timber companies for financial gain. If this forest is allowed to be logged again, the citizens pay twice – once by losing the inherent beauty and natural resources of the Forest and by subsidizing the $7.6 million loss. | *The Citadel project area includes 28,135 acres of National Forest System land. Of those, approximately 30% would be treated under the preferred alternative (Alternative C).*<br><br>*Alternative C proposes 17 miles of new road construction and 35 miles of reconstruction. The roads to be reconstructed are already in place but require a significant amount of work to make them serviceable again. All new roads would be closed following project implementation.*<br><br>*The Forest Plan includes direction to provide timber to industry. Timber harvest is also used as a management tool to reduce fire hazard and bug risk and to move the Forest toward the desired condition identified in the Forest Plan.* |
| **Commenter #11: Doug Koelfgen, 210 Wyoming Ct., Spearfish, SD 57783** | |
| Comment 11-1: Good idea. | *Thank you for your response. Comment noted.* |
| **Commenter #12: Ron Kokesh, 1145 N. Canyon St., Spearfish, SD 57783** | |
| Comment 12-1: Continued timber harvest, bug suppression, wildlife habitat and multiple use of the forest are all important and the F.S. has a difficult job to balance all of these needs and I have definite appreciation for the expertise and balancing act involved. | *Thank you for your response. Comment noted.* |

| Comment | Response |
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| Comment 12-2: First and foremost would be maintaining the privacy of my cabin site from F.S. 222 as much as is possible. Leaving any healthy trees that provide a buffer from my site to the road would be my desire. Storm and bug damage over the years have opened up visual corridors that I cannot do anything about, so it would be important for me to have some input into what is taken out in the area surrounding the cabin site in the future, with the F.S. guidance. | *This cabin is under special use permit with the Forest Service. The Forest Service needs to manage the vegetation surrounding your cabin to maintain forest health. Logging and possible fuels treatments may decrease the possibility of beetle infestations or wildfire. This in turn may change the view from your cabin. You can make arrangements with the special use permit administration to mark and save certain sentimental trees in the immediate area surrounding your cabin. Vegetative manipulation is based on science and treatments will be prescribed based on the most current science to maintain the forest health surrounding your permitted cabin.* |
| Comment 12-3: I might add that with previous approval I did an exceptional job of slash piling, burning with approved permits, planting F.S. approved grass seeds to disturbed areas and weed control all at my own expense….At my last conversation requesting permission to do work it was pretty much conveyed to me that my labor was no longer an option regarding any real cleanup such as that I've done in the past. I would hope someday old fashioned common sense and an ability to work together would return. | *Thank you for your comment and past work. This is out of the scope of the Citadel analysis but can be discussed with the special use administrator at the Northern Hills Ranger District.* |
| Comment 12-4: Of equal importance to me in the overall future logging plan for Citadel would be no new roads or trails into or around my site and a strict new road limit in the overall area plan. I believe the F.S. has taken a good step in trying to alleviate as many of the old roads as possible in the last few years and wish it could be expanded upon. I have seen many of the roads that have been opened up and improved for logging access used as dumping grounds, party areas with litter and campfires, access areas for people to set up campsites for camper trailers during hunting seasons and jumping off points for 4-wheelers to access otherwise inaccessible, easily damaged drainages. The area west of my cabin site accessible by F.S. 105.1D and 105.1C which Middle Beaver Creek emanates from is a good example. I do not believe that this area is in your Citadel plan boundary but felt the need to address it. There are plenty of main roads for people to road hunt and gain access to different areas if that is there [sic] desire without these side trails. It is my belief that there area already too many improved and accessible roads already in the F.S. system; to the detriment of the wildlife and environment. This particular area is totally circumnavigated with main roads and is accessible to anyone wishing to make the effort to hike in. I have made numerous requests in the past to get barricades placed at these access points, even volunteering my own time and money, to no avail. This spring 4-wheelers were crossing soft springy areas to get access to continue down the draw. In contrast: snowmobiles that | *Both action alternatives in the Citadel DEIS proposed road decommissioning. The effectiveness of road closures varies depending on the method of closure and the terrain surrounding the closure (flat, open areas are more prone to illegal access by circumnavigating closures than steeper, narrow roadbeds).*<br><br>*The Citadel DEIS identified new roads necessary to carry out project activities and unclassified roads within the project area to be decommissioned. A Forest-wide Travel Management Plan is currently being developed, which will designate specific roads and areas that are open to certain types of travel (e.g., OHV use, non-motorized travel, vehicle travel). Addressing the OHV issue was determined to be outside the scope of the Citadel DEIS.* |

| Comment | Response |
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| use the area are there at a time of year when the wildlife has usually moved out and are not a real problem. When spring comes you can hardly tell they have been there at all. Not so with 4-wheelers; as once they start using an area the trails continue to get worse and the abuse grows. If there is a legitimate need for ranchers or foresters accessing these sites or retrieval of down game for hunters I would not have a concern. | |
| Comment 12-5: A final concern of mine is lack of weed suppression on newly logged sites. I have been amazed at the spread of noxious weeds in any areas that have seen logging activity. Canadian thistle abounds and other invasive species such as Mullen and Hounds Tongue get so thick that little else is allowed to grow in some areas. Although I realize there is a serious shortfall of funding from the government for many desired F.S. planning, hopefully a little more could be done to address this growing problem. Possibly a cooperative effort involving other environmental groups such as the Elk Foundations Black Hills Conservation Initiative could be tapped. | *Noxious weed treatment and monitoring is presented as an activity common to all action alternatives on page 2-8 of the Citadel DEIS. There are also several design criteria listed in Appendix C that are in place to limit the spread of noxious weeds.* |
| **Commenter #13: Robert F. Stewart, U.S. Dept. of the Interior, Office of Environmental Policy and Compliance, Denver Federal Center, Building 56, Room 1003, P.O. Box 25007 (D-108), Denver, CO 80225** | |
| Comment 13-1: The Department of the Interior has reviewed the draft Environmental Impact Statement for the Citadel Project Area, Lawrence County, South Dakota, and has no comments. | *Thank you for your response. Comment noted.* |
| **Commenter #14: Donovan Nicholas, 19975 Bear Ridge Rd., Spearfish, SD 57783** | |
| Comment 14-1: I am very familiar with the area and would like to offer a few suggestions. I am not for one proposal over another but am glad there will be something done to manage the timber within the allotment. | *Thank you for your response. Comment noted.* |
| Comment 14-2: I would like to start with the roads….I address my comments from Map 7 Alternative B instead of Map 8 Alternative C. They are very similar. Why isn't road no. 130.1P designated as 130.1O which is pre-use maintenance? Road no. 130.1G on the corner of Higgins and running to the west would be preferred to be left open or a metal barrier as it is a major artery if there is a fire to the west. We also use it as a way we bring our cattle from the north to south trailway. Also the road from the gravel pit to the 130.1G road is necessary to get off the hill from the 214.1B road. These can all be behind barriers but not decommissioned. 222.1 north to the top of the hill would be nice since we move cattle up the road from Sheeps Flat. It also could be barricaded as we have keys. Road 214.1C left passible (pre use maintenance instead of decommission). 214.1-130.1 for obvious reasons. Most of these passible roads should be left open at least for fire protection. | *The 130.1O road was identified for pre-use maintenance because it is necessary to access timber harvest units. The 130.1P road will not be used to access any units.*<br><br>*The section of road referred to by the commenter as a portion of 130.1G proposed for decommissioning is actually an unauthorized, user created extension of the Forest System Road. Under both action alternatives, this extension is proposed for decommissioning to reduce resource damage while the authorized section of 130.1G is proposed for pre-use maintenance. The same explanation applies to the 214.1C road.* |

| Comment | Response |
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| Comment 14-3: Four wheeler abuse is terrible but it can be addressed by stiff fines and word of mouth as well as publications. They think they can go anywhere. Road 214.1F to #80 spring is already a mess and will have to be dealt with soon. | *Comment noted. Regulation of all terrain vehicles (ATV) was deemed outside the scope of the Citadel project. This issue will be addressed in the upcoming Forestwide Travel Management Plan.* |
| Comment 14-4: I certainly do not want messes as happened in Higgins as what will happen in this project. The sale administrator must be of the highest quality and be made aware of the goals of the long term as well as short term effect of what is deemed finished. The last two projects have been left a mess and I would not like to see that happen again. | *Sale administrators are from the Northern Hills Ranger District and are familiar with the project's purpose and need and design criteria prior to each timber sale. Forest Service personnel will be working closely with contractors to minimize resource damage from harvest activities.* |
| Comment 14-5: When new roads are constructed, water catch basins should be constructed at the same time instead of years later. They hold the road as well as provide water for the wildlife and livestock. Later when grading the road the operator should not grade out the water bars. | *Comment noted. The actual engineering design of newly constructed roads is not an issue addressed at the project level. Actual design and maintenance activities are determined by an engineer at the time of road layout.* |
| Comment 14-6: Riparian health has been graded great on the allotment. Please state that. Damage has mostly been caused by mining, recreation, four wheelers and elk. | *Comment noted.* |
| Comment 14-7: The thermal cover units should be managed. When they should be in use most of the deer and elk are on the ranches while you wait for a lightning strike among the thicket for the next summer. Good timber management would help these areas. | *Both action alternatives in the Citadel DEIS are designed to reduce fire hazard and provide a diversity of wildlife habitat by moving the project area toward the structural stage objectives set forth in the Forest Plan for Management Areas 4.1, 5.1, 5.4, and 5.6. Multiple stands across the project area will be thinned, which will reduce fire hazard and create openings and potential grazing habitat for deer and elk.* |
| Comment 14-8: Wildlife numbers should be kept in line with available forage. Livestock numbers are constant. Even thought the Fish and Game deny it numbers are exploding. | *Comment noted.* |
| Comment 14-9: As timber is harvested please take out slash out of the sediment ponds not leave it as in the past. These are very important for the wildlife and the livestock. | *Appendix C includes design criteria that call for disposing and rehabilitating slash piles following timber harvest or fuel reduction treatments.* |
| Comment 14-10: Culvert extensions or lack of them are very dangerous. Please take care of this situation. Someone will be hurt or killed. | *The Forest Service understands the hazards of culverts along the shoulder of roads and when possible the hazards are repaired.* |
| Comment 14-11: Invasive weeds are always a problem after a timber sale. Money and man power should be available to maintain vigilance for years afterward. | *Monitoring and treatment of noxious weeds is included as a KV (post sale) activity under both action alternatives (DEIS, page 2-8).* |
| **Commenter #15: U.S. Environmental Protection Agency, Region 8, 1595 Wynkoop St., Denver, CO 80202** | |
| Comment 15-1: EPA is primarily concerned about impacts to water quality, aquatic resources and wildlife habitat from new road construction. We are concerned that the transportation system is being expanded when currently the existing system and non-system roads are damaging water, soil and habitat resources, as | *All new roads constructed under the Citadel project would be closed following use. In addition, 18 miles of unclassified roads would be decommissioned under both action alternatives resulting in a net decrease in the mileage of open roads. Closure of roads is expected to improve water quality in those areas. The impact on* |

| Comment | Response |
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| documented in the DEIS. In addition, the DEIS does not describe how the proposed closure of unclassified roads will be implemented and enforced while residential development adjacent to the national forest and off-highway vehicle use is increasing. | *wildlife would also be lessened as the open road density would decrease both year-round and seasonally (DEIS, page 2-14). Also, maintenance performed on the existing road system as part of this project would likely lessen impacts to water quality and aquatic resources (DEIS, pages 3-18 and 3-22).*<br><br>*The specific methods for closure will vary depending on location and terrain. Methods used include gates, rock barriers, and partial obliteration.* |
| Comment 15-2: EPA also notes that the DEIS considered and eliminated from detailed analysis an alternative that would not have included new road construction. The DEIS acknowledges that 4.5 of the 18 miles of proposed new roads are not necessary to access stands within or adjacent to the WUI areas. Addressing wildfire hazard in the WUI areas is a focus of the proposed action, and a major public concern. Considering the significant and long-term environmental impacts of new road construction, EPA would like the FEIS to include an explanation of why those 4.5 miles of new road are necessary to the project. | *The 4.5 miles of roads referred to in this comment are necessary to access stands that were determined to be in need of treatment to reduce overall fire hazard. Forest Plan Objective 10-01 establishes targets for reducing fire hazard both within and outside of the WUI.*<br><br>*A statement addressing this issue has been added to the FEIS.* |
| Comment 15-3: EPA evaluates the potential effects of proposed actions and the adequacy of the information in the DEIS. We rate this DEIS an "EC-2" (environmental concerns, insufficient information) under EPA's enclosed ratings criteria. The EC rating indicates that the review has identified environmental impacts that should be avoided in order to adequately protect the environment. These are described in the attached comments. We also recommend additional analysis and information to fully assess and mitigate all potential impacts of the management actions. | *Thank you for your specific, constructive comments on the Citadel DEIS. These comments will be considered during finalization of the DEIS.* |
| Comment 15-4: Alternatives – The DEIS states that the ID team internally considered (and eliminated from detailed analysis) an alternative that would not have included new road construction, limiting management actions to those areas accessible by the current road system (page 2-8). EPA supports eliminating or minimizing new road construction because roads contribute to increased stream siltation, mass movement and erosion, damaged plant habitat and increased wildlife habitat fragmentation. The DEIS states that 4.5 miles of the 18 miles of proposed new road construction is not necessary to access stands within or adjacent to the WUI areas. EPA recommends that the Forest Service consider removing those 4.5 miles from the proposed transportation system to reduce impacts from new road construction, or more clearly explain the need for that construction. Management activities could be intensified in areas already accessible by existing roads. | *See response to Comment 15-2.* |
| Comment 15-5: Water Quality – EPA is concerned that all of the 7th level watersheds in the Citadel Analysis | *It is unrealistic to expect that all impacts that led to the Condition Class III watershed status in the Citadel* |

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| Area are Condition Class III (Table 3-4, page 3-10). The DEIS states that those drainages are "of high concern…management activities must be done with great care" (page 3-10). The document states that watershed improvement projects must be part of the project planning, and FSM 2522.11 requires the Forest Service to "improve all Class III terrestrial ecosystems and NFS watersheds to watershed condition, Class I or Class II generally in order of watershed priority." According to the DEIS, Watershed Improvements would involve decommissioning two segments of NFS roads, approximately 0.9 miles total (page 2-7). The Post-sale Activities list includes watershed improvement projects such as bank stabilization, grass planting, removal fill material and possible willow planting (page 2-8). EPA is concerned that decommissioning 0.9 mile of road and the other watershed improvement projects will not offset the sedimentation, soil compaction, erosion, wildlife fragmentation and water quality impacts from the project on watersheds in the Citadel Analysis Area. | *project area could be reversed with one project. Recovery of these watersheds will take time and several projects. The proposed road closures and watershed improvement projects are intended to move the watersheds toward improved health over time (DEIS, section 3.3.1 and Hydrology/Soils Specialist Report).*<br><br>*The Hydrology and Soils specialist report, summarized in section 3.3.1 of the Citadel DEIS, analyzes the effects of project activities on soils and water and determined that the project would meet applicable standards and guidelines.* |
| <u>Comment 15-6</u>: Water Quality – The FEIS should clearly describe how decommissioned roads and new roads that will be closed upon completion of management activities will be rehabilitated, revegetated and restored, including how vehicle access will be blocked. Please include information in the FEIS on how water and soil resources will be protected under this revised transportation network. EPA would also like to see a commitment to monitoring in the FEIS. | *The method of road closure will vary based on site specific features (e.g., terrain, vegetation, road width). Engineers will determine the most effective method of closure based on these features at the time of closure. The intent is to effectively close each road using the most effective tactics at each site. A statement describing the potential closure methods has been added to the FEIS.*<br><br>*Monitoring activities are listed in Appendix C.* |
| <u>Comment 15-7:</u> Water Quality – For any new road construction under the action alternatives, EPA's general recommendations include:<br>• Minimize road construction and road density to reduce adverse impacts to watersheds.<br>• Locate roads away from streams and riparian areas as much as possible.<br>• Locate roads away from steep slopes or erosive soils.<br>• Minimize road stream crossings.<br>• Stabilize cut and fill slopes.<br>• Provide adequate road drainage and control surface erosion with adequate waterbars, crowns, rolling dips and ditch relief culverts to promote drainage off roads or along roads.<br>• Consider road effects on stream structure and seasonal and spawning habitats when determining alignment.<br>• Allow for adequate large woody debris recruitment to streams and riparian buffers near streams. | *Thank you for the suggestions. Several of these items were carefully considered by the ID Team while identifying the potential road network. Several road segments included in the original network were either removed or relocated because they crossed riparian areas, erosive soils, steep slopes, or suitable plant habitat.* |
| <u>Comment 15-8:</u> Water Quality - The DEIS states that the activities in Alternatives B and C would not | *No mitigation measures are proposed but design criteria are included in Appendix C. The language in the FEIS* |

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| adversely impact water quality or beneficial uses in the project area because management measures and BMPs would be implemented (page 3-18). It also states that mitigation measures and BMPs would prevent noticeable negative effects on soil productivity and soil nutrients (page 3-17). Please provide a list of those mitigation measures and BMPs in the Appendices, or incorporate them by reference. | *has been changed to reflect this.*<br><br>*A reference to the BMP document has been added to the FEIS.* |
| Comment 15-9: Aquatic Resources – The wetlands section discusses "delineation" of wetlands when it seems to mean "identification" (page 3-12). Delineation is the process by which the edge of a wetland is located. The DEIS states that, based on the National Wetlands Inventory, there are wetlands in the upper Beaver Creek area and lower in the drainage in Mill Creek, and in Bear Gulch and Higgins Gulch. However, there is no information on the wetlands' acreage or function, or other aquatic resources such as headwaters, waterways, springs, etc. The FEIS should provide a map that indicates whether and how many wetlands and other aquatic resources will be impacted by the proposed activities. It would be useful to include a map that identifies wetlands and waterways in the project area, and the proposed new roads to identify where impacts may occur. | *The word "delineation" has been replaced with "identification" in the FEIS.*<br><br>*No wetlands will be impacted by the proposed activities as they will be avoided during project implementation. The Hydrology and Soils Report (DEIS, pages 3-20 and 3-24) states, "For all activities planned in both alternatives, the integrity of all wetlands (nationally delineated or not) in the area would be protected through BMPs and timber sale contract provisions."* |
| Comment 15-10: Aquatic Resources - Executive Order 11990 requires all federal land managers to protect wetlands regardless of whether or not they are jurisdictional. Wetlands impacts should be first avoided, and then minimized to the maximum extent possible. Any unavoidable impacts should be compensated through wetland restoration, creation or enhancement. The national wetlands policy has set an interim goal of No Overall Net Loss of the Nation's remaining wetlands, and a long-term goal of increasing the quantity and quality of our wetlands resources. EPA supports the use of no-harvest buffers to wetlands, and the use of BMPs that restrict heavy equipment operation in wetlands. We also support the identification of wetlands through field visits to each treatment area, so that wetlands are clearly marked on the Sale Area Map. This will ensure that timber contractors can easily avoid impacting those aquatic resources. | *See response to Comment 15-9. A 100 foot non-treatment buffer is established around each wetland and is specified in each timber sale contract.* |
| Comment 15-11: Noxious weeds – The DEIS states that 80 percent of lands administered by the Black Hills National forest are infested with noxious weeds (3-62). While Appendix C – Design Criteria and Monitoring indicates that noxious weed treatments will be monitored, the DEIS does not address how the project will implement the BHNF Noxious Weed Management Plan. Please include a commitment to this plan in the FEIS. The Forest may also want to consider prevention measures including: | *The Noxious Weed Management plan is referenced in the FEIS (page 3-62).*<br><br>*Many of the prevention measures listed are currently practiced on the Black Hills NF and are included in contract specifications prior to ground disturbing activities.* |

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| • Vigilantly monitor and eradicate new infestations<br>• Use certified weed-free seeds<br>• Prevent vehicles from moving freely between infested and non-infested areas<br>• Thoroughly clean the undercarriage of any vehicles or machinery coming into a treatment area<br>• Permit animals to graze weeds only before they flower and set seed<br>• Minimize soil disturbance caused by water, livestock, vehicles or machinery<br>• Create, maintain and monitor boundary strips between infested and non-infested areas<br>• Use good land management practices such as rotational grazing, water conservation, erosion control, revegetation and maintenance of competitive vegetation that can withstand weed invasion. | |
| <u>Comment 15-12:</u> Wildlife habitat – EPA supports Forest Service consultation with the U.S. Fish and Wildlife Service, the South Dakota Game, Fish and Parks Department and the Wyoming Department of Environmental Quality to reduce and mitigate adverse fish and wildlife impacts. Appendix B provides some information on design criteria for different wildlife species and their habitats, and other project activities. Appendix C identifies additional monitoring objectives/items for particular resource monitoring needs including hydrology and soils, sensitive plants, noxious weeds and fuels. These documents provide good summaries of the standards and objectives the Forest intends to meet, consistent with Forest Plan direction, and monitoring protocols that have been established for various resources. However, EPA is concerned that there are no identified targets or thresholds which would signify when management actions would be modified to ensure wildlife and other resources are adequately protected.<br>We encourage the Forest to consider using an adaptive management approach for the bald eagle, the six wildlife species on Region 2's Sensitive Species list, and the 10 sensitive wildlife species with potential habitat in the project area (page 3-68). An effective adaptive management approach would include a strong commitment to monitoring to ensure that the project is meeting objectives and mitigating impacts to habitat. It would also include:<br>• A decision tree with clear objectives to guide future decisions<br>• Targets/thresholds that specify a desired future condition<br>• Trends specifying a desired change relative to | *We appreciate EPA's ideas on adaptive management and will consider these approaches as we implement the guidance in the appendices.*<br><br>*This project has been designed to comply with the design criteria listed in Appendix C. This approach, while still requiring monitoring, is not as dependent on constant monitoring as is an adaptive management approach. We believe this lends itself more readily to implementation under a timber sale contract and allows us to focus limited monitoring money.*<br><br>*Monitoring of wildlife resources is conducted at the Forest level and results are reported yearly in the Forest-wide Monitoring Report.* |

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| the current condition, especially when trend is more important than condition, or information is lacking to describe future condition<br>• Specific direction thresholds with identified indicators for each impacted resource<br>• A monitoring plan with protocols to assess whether thresholds are being met<br>• A firm commitment to use monitoring results to modify management actions as necessary. | |
| Comment 15-13: Botanical areas – Three designated botanical areas exist partially or wholly within the Citadel project area, representing 4,024 acres of the NFS lands in the project area (page 1-14). Although the DEIS states that "the opportunity exists" to minimize impacts to those areas and avoid degrading their biological integrity, there are no maps or site-specific indicators showing if the proposed management activities will avoid those botanical areas. Botanical areas are also not included in Appendix C – Design Criteria and Monitoring, so it does not appear that management requirements will be applied to activities in those areas. Please provide information in the FEIS indicating how impacts to those resources will be avoided, minimized or mitigated. | *No management activities will take place in any of the Botanical Areas within the Citadel project area. Avoidance was determined to be the best method of protecting the botanical values within those areas. The only road activities proposed in the Botanical Areas is decommissioning of non-system roads.*<br><br>*Every effort was made to make the maps in Appendix A of the Citadel DEIS as readable as possible. Adding too much information to a single map makes it cluttered and hard to interpret. Therefore, the Management Areas are displayed separate from the proposed treatments under each action alternative. By referencing both the Management Area map (Map 3, page A-4) and the treatment maps (Maps 4 and 5, pages A-5 and A-6), one can see that no treatments are proposed in the Botanical Areas.* |
| **Commenter #16: Lawrence County Commissioners, P.O. Box F, 90 Sherman St., Deadwood, SD 57732** | |
| Comment 16-1: Enclosed please find our comments on the Citadel Draft EIS. We respectfully request you give due consideration to the recommendations made by our Timber Committee formed under the Lawrence County Environmental Review Plan Ordinance and request the Forest Service involve Lawrence County to the fullest extent permitted under federal law. We would like to strongly emphasize our displeasure in three areas… | *Thank you for your response. Comments submitted by Bill Coburn on behalf of both the Lawrence County Timber Committee and Pope and Talbot, Inc. are addressed below under Commenter #17.* |
| Comment 16-2: The suggested alternatives do not adequately treat the mountain pine beetle infestation. The USFS describes the mountain pine beetle population as endemic but you are only treating 10% of the area to bring the mountain beetle risk to low. | *Alternative B would thin approximately 43% (12,055 acres) of the National Forest System acres in the project area. Alternative C would thin approximately 42% (11,685 acres). These thinnings would not, and are not intended to, bring mountain pine beetle risk across the project area to low. Rather, they would result in fewer acres at high risk and more acres at moderate or low risk. Forest Plan direction (Objective 10-07) calls for reducing bug risk where it is moderate or high, but does not set goals for achieving specific levels of risk.* |
| Comment 16-3: Too many acres have been deemed "unsuitable" by the USFS. With so many acres in that category you cannot adequately treat the mountain pine beetle problem or the wildfire risk. | *The areas where the timber component codes were changed from suitable to unsuitable are in Management Area 3.32 (Backcountry Non-motorized), which is defined as not suitable for timber harvest under the Forest Plan. These changes are simply an administrative correction to the database to bring it in* |

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| | *line with Forest Plan direction.*<br><br>*Other treatments, such as fuels reduction and prescribed burning, are proposed in MA 3.32 under Alternative C and are designed to reduce the fire hazard in that area.* |
| Comment 16-4: Another concern we have is not addressed in this EIS. We are very concerned about the unsafe condition of FS Road 134. The roughness and dust problems will only get worse and they are not good now. We ask that you add funding for road maintenance/improvements. | *This is outside the scope of the Citadel project. However, a contract for road maintenance of FSR 134 was recently awarded. This contract includes road blading, ditch cleaning and culvert cleaning two to four times per year for the next five years.* |
| **Commenter #17: Bill Coburn and Fritz Carlson, Pope and Talbot, Inc., 1510 West Oliver St., P.O. Box 850, Spearfish, SD 57783** | |
| Comment 17-1: The most significant issue regarding this EIS is the amount of unsuitable acres that is limiting the ability to meet its structural USFS [sic] has to manage around and the fact that the USFS is also trying to expand these acres by over 1800 acres.<br><br>11,000 out of the 28,000 acres has been deemed unsuitable by the USFS. About 5000 acres is in 2 contiguous areas with the rest spread around through the project. This significant amount of unsuitable acres has made it extremely difficult for the USFS to meet project wide goals for structural stages, mountain pine beetle risk reduction and crown fire hazard.<br><br>Most of this unsuitable is in Management Area 3.1 which was controversially designated as a Botanical area in the 1996 Forest Management Plan. This MA comprises 4130 acres of the Citadel Project. The USFS is supposed to manage this area to conserve or enhance areas of botanical interest and develop and interpret this area for public education. The 1996 LRMP suggest that an overall management strategy be developed for this area. Has this been completed?<br><br>In the scoping letter the USFS mentioned that Prescribe Natural Fire could be used in this area which is just south of private land and populated areas. We strongly recommend that PNF burn window be narrowly defined. Much of this area has very high stocking levels and high fuel loading. We recommended that the USFS integrate some fuel reduction treatments which can include commercial timber harvesting on the north end of this area. Evidently they did not agree. It would also be helpful if the USFS tell the public why this area was designated as Botanical Management Area and how it is going to be managed to enhance these characteristics. | *The Citadel project area contains approximately 4,130 acres of Management Area 3.1 (Botanical Areas) and 945 acres of MA 3.32 (Backcountry Non-motorized Recreation). Both of these MAs are identified in the Forest Plan as not contributing to the allowable sale quantity on the Forest and are not suitable for timber harvest. During review of the database while developing the Citadel DEIS, it was discovered that many stands in these areas were assigned a suitable timber component code. Other stands outside of MAs 3.32 or 3.1 were also changed from suitable to unsuitable based on recommendations from engineers and sale preparation specialists regarding feasibility and accessibility. Additional stands were changed to unsuitable because during field verification they were discovered to be hardwoods or grasslands rather than conifers. Changing the component code from suitable to unsuitable is an administrative correction to the database to make it compliant with the Forest Plan and does not require NEPA documentation or analysis. Because of this, language pertaining to the timber component code corrections has been removed from Appendix B of the Citadel FEIS.*<br><br>*Both action alternatives move the project area toward Forest Plan goals and objectives for structural stage diversity, mountain pine beetle risk and fire hazard.*<br><br>*The Forest Plan states that "A management strategy **may be** developed for botanical areas" (emphasis added).*<br><br>*No mention of prescribed natural fire was made in either the Citadel scoping letter or Notice of Intent. Currently, there is not a Wildland Fire Use Plan established for the Forest and the use of prescribed natural fire is not proposed.*<br><br>*Refer to the 1996 Revised Forest Plan FEIS (pp. III-307 through III-317) for discussion on botanical areas.* |

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| | *Specific management goals of botanical areas are outside the scope of the Citadel project.* |
| Comment 17-2: Another large area of unsuitable MA 3.32 is on the east flank of Crow Peak. This area is designated Backcountry Non-motorized Recreation Emphasis and contains the popular Crow Peak hiking trail. We would recommend to the USFS that in the future they very carefully evaluate the consequences of designating areas as unsuitable. | *Comment noted.* |
| Comment 17-3: The USFS is proposing to change the Timber Component Code of 81 stands containing 2179 acres. 84% of acreage (1824 acres) involve changing suitable to unsuitable Timber Component Code. This is a significant change in the suitable acres yet we saw no discussion on this except for the table and a small description in the appendix of the EIS. In order for the USFS to make changes to the suitable acres it must first go through a Forest Plan Amendment. We have found no disclosure in the EIS that indicates there is going to be a Forest Plan Amendment as part of this process.<br><br>It is also hard to believe that after all the projects that have been implemented on this area that this problem with suitability was not recognized and corrected earlier. There is only one stand (41 acres) that is being changed from unsuitable to suitable.<br><br>There are 371 acres of suitable lands with timber component codes of 511 and 650 that are being changed into 803 which is Botanical Area (tentatively suitable is special or unique in these areas that is not already part of the existing Botanical Area? It is apparent that the USFS is trying to change all stands that do not have a TC code of 803 to 803. They are also designating stands outside of the 3.1 boundary as 803 TC.<br><br>*(List of affected stands omitted.)*<br><br>There are 724 acres of suitable lands with timber component codes of 521 and 650 that are being changed into 823 which is tentatively suitable due to "Road problems prevent access development. This access problem is a direct result of the USFS changing the timber component codes of 071001 Stands 16, 17 and 23 to 803 (Botanical) which has eliminated the best and one of only two access points to 071001 stands 19, 20, 22, 26, 27, 39, 56, 57, 58, 59 which contain 4.3 million board on 398 acres. The following stands are also being changed to TC 823.<br><br>*(List of affected stands omitted.)* | *See response to Comment 17-1.*<br><br>*Some of the stands in question have been harvested in the past. Management Area designations were altered under the 1996 Forest Plan revision, so some areas which may have been part of the suitable base under the 1983 Forest Plan are not in the suitable base under the current Forest Plan.*<br><br>*Changing component codes does not require a Forest Plan Amendment nor is it a decision that requires NEPA analysis. It is an administrative action that is simply being documented in the Citadel DEIS because the need for change was discovered during development of the Citadel project.*<br><br>*All changes to timber component codes were based on Forest Plan direction and input from Forest Service specialists including engineers, sale preparation foresters and silviculturists.* |

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| We would like to have more individual stand evidence be put forth by the USFS that provide sufficient rationale why these timber components are being changed. How many of these stands have timber harvesting history? Has any consideration been made on using alternative methods of transporting logs like forwarders? Has any consideration been given to leaving the stands timber component as is? Has the USFS asked for input from the timber industry? They would seem to have a better understanding of what ground is operable and accessible. As mentioned earlier almost 40% of this project area is designated unsuitable so it is hard to understand why the USFS finds it so imperative to designate another 1800 plus acres as unsuitable when it severely restricts its management tool. | |
| Comment 17-4: Decreasing the threat of large wildfires is one of Lawrence County's highest priorities. The USFS presently rates over 76% of the project as having very high to high crown fire hazard. 76% of the WUI acreage has a high to very high crown fire hazard while 77% of the non-WUI areas have high to very high crown fire hazard. Alternative B proposes to reduce the WUI very high to high crown fire hazard to 64% and the non-WUI very high to high crown fire hazard to 58%. Alternative C proposes to reduce the WUI very high to high crown fire hazard to 57% and the non-WUI to 54%. One of the problems facing the USFS on this project is that they have designated almost 11,000 acres as nonsuitable for forest management which severely limits the tools the USFS can use to reduce crown fire hazard risk. It appears with this limitation that the USFS has done what they can to reduce the crown fire hazard on suitable areas. | *It is not expected that all Forest Plan goals and objectives will be achieved in a single planning cycle. Rather, it is our goal to move the project area toward the overall Forest Plan goals and objectives. Under the Citadel project, we have taken a significant step toward achieving Forest Plan Objective 10-01 regarding fire hazard within and outside of the WUI.* |
| Comment 17-5: We have concerns about USFS proposal to commercially thin to 20 BA and 40 BA. Alternative C is proposing on treating 877 acres with what they describe as a commercial thin to 20 basal area and another 2131 acres with commercial thin to 40 basal area. These treatments have been applied on the Bugtown project in the southern hills with poor results in some areas. Thinning to these low stocking levels results in significant windthrow and snap off mortality especially where the trees are tall and spindly. These treatments were used to reduce the basal area enough to stop the beetles from entering stands in the Bugtown project where mountain pine populations were at epidemic levels. That is not the case here. The beetle populations are at endemic levels.<br><br>Thinning these stands to a low basal will also decrease the crown fire hazard but we would submit that there is minimal difference between 60 basal area and 40 basal | *These relatively intensive thinnings were prescribed in Management Area 5.4 (Big Game Winter Range) to provide more open habitat for wildlife. One of the stated goals of Alternative C in the Citadel DEIS is to provide a diversity of wildlife habitat.* |

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| area and that the trade offs in productivity are tremendous.<br><br>By thinning the trees to these stocking numbers you also reduce the long term productivity of the forest to grow trees. This might be okay in MA 5.4 but is not in MA 5.6 and 5.1 and 4.1. In summary we do not believe either of these treatments are appropriate for this sale. | *A majority of these treatments (thin to 20 or 40 BA) are proposed in MAs 5.4 and 5.6, which both include a big game emphasis. One area of MA 4.1 also contains these treatments. This area is north of Crow Peak, along the project area boundary with state and private land. These stands were identified for these treatments because the adjacent state and private lands are heavily used by big game.* |
| Comment 17-6: The location and amount of prescribe burning proposed in Alt C. is a significant concern. Alternative C proposes to prescribe burning almost 1100 acres of suitable ground that have basal areas over 80 square feet per acre of trees 5 inches and greater without any type pretreatments of the fuel. Alternative B proposed to commercially treat 9 of these 45 stands. These 45 stands also contain over 12 mmbf of commercial timber which is going to be put at severe risk by what is being proposed in Alternative C. See attached R2 Veg Data prescribe burning exhibit. It should be very apparent to the USFS that burning stands with these conditions has a very high risk. We propose that if the USFS does want to burn these stands the heavy overstory of commercial timber should be commercially treated first. Where the stocking conditions of 5 to 9 inch trees is highly stocked prescribe burning means significant mortality and high risk to both the overstory and also for managing the burn. Alternative B proposes some precommercial thinning in some of these stands followed by a prescribe burn. We would suggest that much of the slash from the precommercial thinning be removed. In addition, whole tree logging should be evaluated to reduce fuel loading. If the prescribe burning is to improve forage production then a hot fuel reducing burn is not required. | *Most of the 1100 acres referred to is the 945 acres of MA 3.32 surrounding Crow Peak. Commercial timber harvest is not authorized under Forest Plan direction for this area. Hand thinning to reduce the density of fuels in the understory is an option and will be carried out as necessary in this area to reduce the risk of high intensity fire.*<br><br>*Prescribed burns are carefully planned and only implemented when a very specific set of environmental conditions (often called a "burn window") are met. A significant amount of planning and site preparation occurs prior to ignition of a burn unit. Every precaution is taken to ensure that prescribed burns are accomplished effectively and safely. The goal of conducting prescribed burns in the Crow Peak area is to reduce accumulated fuel buildup and to return fire to a fire-adapted ecosystem which has not experienced fire for many years. Prescribed burns are intended to be low-intensity ground fire as opposed to high-intensity fires that consume overstory trees.*<br><br>*No attachment was included with the comment letter received from Pope and Talbot.* |
| Comment 17-7: In the suitable areas we strongly recommend that USFS limit the total mortality of commercial trees to 10 % or less. This is still a significant amount of volume (1.2 million board feet) especially in Alt C. We would highly recommend that the USFS include salvage provisions in the evaluations of impacts so that if the burning did kill a significant amount of timber the USFS could put the salvage sale up quickly. | *Comment noted.* |
| Comment 17-8: The USFS is also proposing to burn much of Crow Peak that is classified as 3.1. Much of this area is steep. It also includes the popular Crow Peak trail that whose visual integrity should be protected. The Scenic Integrity Objective of this area is | *Crow Peak is in Management Area 3.32.*<br><br>*Refer to response to Comment 17-6.* |

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| high. This means that human activities are not suppose to be visually evident. Prescribe burning this area would significantly change this SIO. We agree that the tree stocking is high in some areas and should be reduced to decrease the WUI hazard. We do not agree that prescribe burning these heavily stocked stands will reduce the wildfire risk. It will most likely kill a lot of trees resulting in increased dead fuels, increased bug activity and decreased aesthetic appeal. There is also a high likelihood that with a high number of dead trees the safety of hiking the Crow Peak trail may be questioned. | |
| Comment 17-9: After reviewing the resulting structural stage from the scheduled treatments per alternative it is apparent that the USFS needs to increase the amount of SS1, SS3A and B. Alternative C has too much SS5 in MA 4.1. We are also concerned that SS4C is too high in both Alt B and C in MA 4.1 and 4B is too high in MA 4.1, 5.1, 5.4 and 5.6. We strongly encourage the USFS to strive on meeting the structural stage goals set in the Phase 2 amendment for each of the Management Areas that are suppose to increase the vegetative diversity of the BHNF. | *It would be virtually impossible to meet the structural stage objectives exactly in one attempt. The goal of Citadel is to move forest conditions toward the Forest Plan structural stage objectives. We can affect the distribution of structural stages through management actions, but can not create the desired range of structural stages through harvest alone. Over time, natural process will allow the forest to respond and a more desirable of structural stages will develop.*<br><br>*It should also be pointed out that the structural stage objectives are Forest-wide objectives and are not specific to each project area. While Citadel may have an excess of SS 5 in MA 4.1, another area of the Forest may be deficit in SS 5 in MA 4.1. Overall, these two areas would balance out and the structural stage objective would be met. According to the 2006 Forest Monitoring report, there is currently less than 1% of MA 4.1 Forest-wide that is in SS 5. The Forest Plan goal for MA 4.1 is 5% in SS 5, leaving a gap of over 4% between the desired and existing condition.*<br><br>*Changes in structural stage diversity are recorded and compiled yearly and the effects to the Forest-wide distribution are presented in the yearly Monitoring Report.* |
| Comment 17-10: The USFS describes the present mountain pine population on this project as endemic and we would agree. The current risk breakdown for the Project Area is 44% or 10,702 acres is rated as high, 31% or 7,432 acres is rated as moderate. Alternative C proposes to actually increase the acreage of moderate risk by 17% and the high risk is only reduced by 19% in Alternative B and by 27% in Alt C. This means that both alternatives do very little (Alt B – 10% reduction, Alt C – 9%) to reduce the mountain beetle risk to low. We find this ironical since one of the project goals stated in the scoping letter was to reduce the potential for epidemic mountain pine beetle infestations. It is our opinion that a reduction of only 9 to 10% does not | *It is not feasible to reduce all acres of ponderosa pine to a low mountain pine beetle risk rating in one treatment. The treatments proposed by the action alternatives would move the project area toward Forest Plan Objective 10-07, which calls for reducing beetle risk where it is moderate or high. Treatments proposed by the action alternatives would move some stands from high to moderate risk and others from moderate to low risk.* |

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| represent a significant reduction. | |
| Comment 17-11: More than 233 million board feet on all acres. 155 million on suitable ground. The USFS is estimating that both Alternative B and C produce about the same volume (46 mmbf vs 47 mmbf respectively). Although we would have liked to have seen more variation in the potential harvest numbers between the alternatives we do believe that the USFS has done a decent job of treating most of the suitable areas. | *Comment noted.* |
| **Commenter #18: Darrell Nicholas, 10152 Red Hill Place, Spearfish, SD 57783** | |
| Comment 18-1: I am a permittee in the Citadel area and would like to make some comments on the area. First, I would like to know what the logging area is suppose [sic] to look like when the sale is over. The roads are completely done away with, and this causes some concern to me, because I have some springs in the area, and I cannot get to them for maintenance. | *The appearance of a particular stand after a timber sale will vary depending on the pre-sale conditions and the silvicultural prescription applied to the stand. We are unable to comment on the appearance of the area without more specific information. Likewise, we are unable to address the commenter's concerns with road closures without knowing specific roads of concern.* |
| Comment 18-2: When you build roads for a new timber sale, why can't they build the water bars with the sediment ponds on the side. This stores water for the cattle and the wildlife and helps us keep the cattle dispersed and away from the big water sources. When you grade the road the driver needs to pay attention so as not to destroy the water bars. | *Comment noted. The actual engineering design of newly constructed roads is not an issue addressed at the project level. Actual design and maintenance activities are determined by an engineer at the time of road layout.* |
| Comment 18-3: The permittees in the Higgins allotment have gone over the road maps, and made recommendations that we would like to see implemented in the future. | *Comment noted. We did not receive the recommendations mentioned in the comment.* |
| Comment 18-4: I would like to go on record saying that the riparian areas in our allotment look real good considering all the wildlife and mining that goes on. | *Comment noted.* |
| Comment 18-5: The Forest Service is going to have to help us with the GFAP and their run away wildlife that is just getting out of hand. | *We assume that this comment is referring to big game populations, deer and elk in particular. Management of big game populations is the responsibility of the South Dakota Department of Game, Fish and Parks and is outside the scope of this project.* |
| Comment 18-6: Another big problem is the weed situation that is getting plum out of hand. | *Control and monitoring is included as a post-sale activity under both action alternatives (DEIS, page 2-8). Design criteria will also be incorporated to minimize the spread of noxious weeds during project activities (DEIS, Appendix C).* |
| Comment 18-7: I would like to see some kind of restraints be put on all this 4wheeling [sic] and the damage they do to our water holes and hill sides. There needs to be some big fines placed on the books that | *Thirty-one miles of unclassified roads would be decommissioned and all new roads would be closed following use under both alternatives. These roads would be closed using site-specific measures aimed at* |

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| would really get there [sic] attention. | *preventing illegal use. Raising the dollar amount of fines for illegal ATV use is outside the scope of this document.* |
| **Commenter #19: Eric Hunt, South Dakota Off Highway Vehicle Coalition, 338 Evans Lane Box A, Spearfish, SD 57783** | |
| Comment 19-1: Upon reading your Alternative A (No action), Alternative B (Proposed Action), and Alternative C (Preferred Alternative). SDOHVC agrees that it would be in our best interests to thin this project area to reduce the fuel loads, reduce the risk of wildfire, and reduce large pine beetle outbreaks. We do however have concerns with the approach of decommissioning some of the non-system roads with this project. SDOHVC feels that it would be better at this time to leave out the parts about decommissioning roads and leave that to be [sic] the ongoing with the Black Hills National Forest travel management process.<br><br>Many of the routes that users have submitted to the Forest Service for consideration to our Travel Management Process. Lie in this project area [sic].<br><br>Furthermore, it does not appear that any consideration is being made to the planning the Black Hills National Forest is currently in the process of regarding. | *The intent of the Citadel project is to make necessary changes to address resource concerns at the project level, such as decommissioning unclassified roads or constructing new roads to access harvest units.*<br><br>*The Forest-wide Travel Management Plan currently in development will establish accepted uses for different areas and roads across the Black Hills National Forest. The final Travel Management Plan will consider decisions made at the project level but could also reverse project level changes to the road system.* |
| Comment 19-2: Recreation is a legitimate activity in the National Forest and that has been formally recognized as such by the Chief of the Forest Service when the Travel Management Rule was final. The OHV community needs you to manage that outback experience not simply close it without due consideration. | *Recreation is recognized as a legitimate activity in the Black Hills and was analyzed in the Citadel DEIS as such (DEIS, section 3.5.1).*<br><br>*The focus of travel management in the Citadel project is primarily on controlling resource damage.* |
| **Commenter #20: Nancy Hilding, Prairie Hills Audubon Society, P.O. Box 788, Black Hawk, SD 57718** | |
| Comment 20-1: Please accept these comments in addition to those already submitted by Prairie Hills Audubon Society as co-signer on to Biodiversity Conservation Alliance's comment letter. | *Thank you for your response.* |
| Comment 20-2: Roads in SPNM Classed areas<br><br>Beaver and Bear Gulches are Botanical Areas (Management Area 3.1), which have a ROS class designation of SPNM. Unfortunately despite their SPNM classification they have existing roads within the areas. The DEIS brags that it is not building new roads in the botanical areas – that is good, but it should decommission the roads in the Botanical areas. We also believe that road repair and "new convert" are also planned in these areas during the Citadel Project. What is a "new convert"? | *Forest Plan direction for Management Area 3.1 does not prohibit the existence of existing system roads in Botanical Areas (BA). Livestock grazing is allowed in Botanical Areas and occurs in the Bear/Beaver Gulch BA. The system road currently in place there is necessary to allow permittees to access the grazing allotment.*<br><br>*Road reconstruction and pre-use maintenance are proposed for roads along the western and eastern boundaries of the Bear/Beaver Gulch BA in order to access harvest units outside of the BA.* |

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| We believe that existence of such roads within a SPNM classed area are not consistent with the "ROS Users Guide" guidance for management of a SPNM area. They may also not consistent with the guidance in the FSM about roads in SPNM areas. Failure to provide SPNM classed areas that are without roads and actually meet the SPNM ROS criteria is a common failing on the BHNF. | *A "new convert" is a currently existing unclassified road that will be converted to a system road and used for project activities. All new converts will be closed following use. No new converts are proposed within any of the BAs in the Citadel project area.*<br><br>*The Forest Plan, under the definition of Semi-primitive Non-motorized areas states "…local roads used for other resource management activities may be present…" (Forest Plan, Glossary pg. 54). As stated above, the existing system roads are used by permittees and Forest Service personnel for livestock management activities, which is an authorized use in MA 3.1.* |
| Comment 20-3: The DEIS at 3-59 explains that 6.2 miles of new roads are planned in the Botanical Area closure boundary. We object to the creation of new roads in the closure boundary. | *The roads in question are not within the BA itself, but rather the closure area that extends beyond the BA boundary. The closure area restricts off-road motorized travel but does not prohibit on-road travel (EIS, page 3-59). All 6.2 miles of newly constructed road would be closed following project activities.* |
| Comment 20-4: Please provide a map of vegetative cover type under various alternatives. Please also provide a map of structural stages under the status quo and showing stages resulting from each alternative. Please provide a topographical map. Please provide map of water bodies and of the SIO and ROS classes for the area. | *All of this information is in the project file and was considered in the analysis and decision.* |
| Comment 20-5: Thanks for a much larger and better description by the landscape architect, than EAs [sic] used to have.<br><br>SIO are guidelines and were created during forest planning theoretically on a computer from overlays of various values at the SO, by Joby Timm, without ground-truthing. Please review all existing SIO to see if they are correct and should be changed. Please especially look at the Needles area. You can use an EIS to change SIO. | *Comment noted.*<br><br>*SIO is considered during the analysis process and changes made as necessary. No changes to the SIO for the Citadel project area were identified.* |
| Comment 20-6: We object to the statement on page 3-118 that removing pines from conifers enhances visuals. Sometimes it does, sometimes it doesn't --- this is just too simplistic summary of visual values. | *We assume this refers to removal of conifers from aspen clones rather than removal of pines from conifers as stated in the comment letter. Under the "Desired Conditions" heading (DEIS, page 3-118) the intent was to convey that one method to achieve a natural appearing forest is to remove conifers from aspen clones, thereby sustaining those clones for the long-term.* |
| Comment 20-7: You discuss the effects of "whole tree yarding" and large slash piles on the SIO (page 3-122). However you don't discuss how many meadows and other scenic places will now have large slash piles in them or after burning of the pile still have scatter limbs | *Appendix C includes design criteria that call for disposing and rehabilitating slash piles following timber harvest or fuel reduction treatments.*<br><br>*These design criteria call for reducing slash to natural* |

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| lying about? Please provide a quantitative as well as qualitative discussion. | *levels in highly visible areas and treating slash within one year of timber harvest.* |
| Comment 20-8: We think there is no prohibition on removing large trees from the project. We don't see a size limit discussed anywhere. Please put a limit on removal of large diameter trees. | *The Forest Plan includes structural stage objectives for MAs 4.1, 5.1, 5.4, and 5.6. Included with these structural stage objectives is the objective of retaining at least 10% of structural stage 4 in "very large" trees (16+ inches DBH). Structural stage projections, including percentages of "very large" trees in each MA, are included in the Citadel project file.*<br><br>*During commercial thinning or seed cut harvests the best-formed, largest trees are retained to provide a seed source for regeneration.* |
| Comment 20-9: The FS repeatedly admits that aspen & birch provide a firebreak in some situations. However despite a "purpose and need" to reduce large high-intensity fire, very few "commercial hardwood enhancements" are planned. We need to see a map of cover types to figure out what the potential for "hardwood enhancement" or "hardwood enlargements" could be. A "hardwood enlargement" would be to remove pine stands that encircle around aspen/birch. Please provide a map of both hardwoods and of mixed stands. We need maps of mixed stands as the FS frequently classes mixed stands that are predominately aspen as pine cover type and thus we miss knowledge of areas with a substantial aspen/birch component. Please indicate what percent of stands have a significant aspen/birch component. While increasing aspen/birch helps protect from fire and provides biodiversity, some of the largest and oldest yellow bark pine trees in the forest can be within aspen/birch stands. These old yellow barks, wherever they are, should be protected as we don't have many large yellow barks left and the visual juxtaposition of large yellow barks over aspen stands is lovely and provides biodiversity values. | *This information is in the Citadel project file and was considered during analysis.* |
| Comment 20-10: Within this area you have 4.1, 3.32 and 5.6 management areas, all of which have at least partly a special recreation purpose. On page 1-21 you indicate the public input had recreation related concerns, yet your "purpose and need" is just related to fire, timber and wildlife. Recreation or visual issues don't appear in your list of general goals (pages 1-6—1-13). Why isn't recreation part of the "purpose and need" or one of the general goals? Having large yellow barks, undisturbed meadows and waterways, having scenic areas near rock features etc are important to recreation and visuals. Building of more roads increases the OHV impacts and limits non-motorized opportunity. Yet on page 2-8 your indicate that late succession emphasis does not meet the "purpose and need". If recreation | *The Purpose and Need for a project is developed by analyzing the existing conditions compared with the desired conditions (as outlined in the Forest Plan) and identifying the gaps that represent a need for change. While recreation is certainly a significant resource in the Citadel project area, it was not identified as a primary driver of a need for change. The responsible official selected other resources to focus on.*<br><br>*The effects of new road construction related to increased OHV access is discussed in the Citadel DEIS on page 3-112.* |

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| management is not part of the purpose and need – ironically in an area with lots of recreation management and rare SPNM ROS class areas-- then management to promote recreation won't happen. | |
| Comment 20-11: Thank you for increasing the types of recreation you acknowledge as happening on the Forest. This is one of the most inclusive lists I have seen in a project EIS by BHNF, however you should add photography/artistic rendering to the list. You might also want to add some Native American activities to the "Ongoing Activities" section; don't they worship and/or collect herbs/plants? | *Comment noted. The suggested activities have been added to the list in the FEIS.* |
| Comment 20-12: Prairie Hills Audubon Society has had comments from members on need for protection of the Needles area from logging and roads. We request that the landscape architect take a special look at the Needles area to see if the SIO are correct for it and that the Recreation staff also look at this area. Please don't build new roads next to this area or increase the likely hood of ATV use. Please protect the visual quality of the area and provide an adequate buffer around it where no logging occurs. | *The Needles are located in MA 5.6, which has a recreation opportunity spectrum (ROS) class of "roaded natural". As stated in the Forest Plan, "Because management activities occur in these areas, users are likely to encounter people associated with timber harvesting, livestock management or other activities." A majority of the acres in MA 5.6 Forest-wide (20,114 out of 27,176) are classified as "moderate" SIO.*<br><br>*We agree that this area is unique for visual quality. The ATV routes are being addressed in the Forest wide Travel Management analysis and outside the scope of the Citadel project.* |
| Comment 20-13: Sand Creek Roadless Area to the west is one of the few Roadless Areas on the Forest. We have spoken with Steve Kozel at Bearlodge about the potential for a trail system that connects Sand Creek with the SPNM areas in SD – namely Beaver and Bear Gulches, which are close by to Sand Creek. Such a non-motorized trail system would need to protect the Botanical area's plants, by not impacting critical areas with traffic.<br><br>We hope you will think of a broad recreation plan for non-motorized recreators and limit roads and logging so the areas in or around the SPNM ROS classed areas and provide a connection from them to a larger trail system with Sand Creek at its core. Decisions you make now to log or road could pre-empt such future choices. The non-motorized users of this forest need for their needs to be recognized and protected. | *No road construction or timber harvest activities are proposed for the Bear/Beaver Gulches Botanical Area.* |
| **Commenter #21: Suzanne Lewis, Biodiversity Conservation Alliance, P.O. Box 1512, Laramie, WY 82073** | |
| Comment 21-1: Biodiversity Conservation Alliance, Prairie Hills Audubon Society, Western Watersheds Project and Suzanne H. Lewis submit these comments in response to the U.S. Forest Service's (USFS) May 2007 Draft Environmental Impact Statement (DEIS) for the | *The Citadel project is consistent with the Forest Plan.*<br><br>*Conducting only non-commercial treatments in WUI areas would not achieve the stated Purpose and Need for the Citadel project area. The identified Purpose and* |

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| Citadel Project on the Black Hills National Forest (BHNF). Because the project involves a significant level of commercial logging and other tree cutting activities, it will be referred to as the Citadel timber sale.<br><br>The Citadel timber sale DEIS fails to take a serious and objective look at the environmental impacts of logging and road construction in the Black Hills and fails to adequately protect the natural values of the BHNF. The DEIS exaggerates "forest health" concerns in an attempt to justify more commercial logging in an already stressed forest ecosystem. If the USFS chooses to continue to move forward with the Citadel timber sale, we request the USFS pursue only noncommercial treatments within the wildland urban interface to ensure protection of homes and communities from any potential forest fires.<br><br>The Citadel timber sale is also a project implementing the Phase II Amendment to the 1997 BHNF Revised Land and Resource Management Plan ("LRMP"). Unfortunately, the Phase II Amendment is flawed in many ways and ultimately fails to adequately protect native wildlife, fish, and plants and their habitats to ensure their viability across the BHNF. This in turn casts serious doubt over whether the Citadel timber sale will adequately protect wildlife, fish, and plants and their habitats. | *Need includes reducing mountain pine beetle risk, creating a diversity of wildlife habitat and providing commercial timber to industry. An alternative that conducts only non-commercial treatments in WUI areas would achieve only one aspect of the purpose and need and would not address resource concerns that exist outside of the WUI.*<br><br>*The sufficiency of the Phase II Amendment is outside the scope of the Citadel project. That analysis and decision are documented elsewhere and were affirmed on appeal.* |
| <u>Comment 21-2</u>: One of the stated purposes of the timber sale is to provide for wildlife habitat needs. DEIS at i. This was also one of four significant issues identified through the scoping process. DEIS at ii. Yet there is little in this entire analysis that demonstrates a commitment to this focus item. Indeed, the disclosed adverse impacts to wildlife continue to mount with each new timber sale on the forest and the USFS continues to ignore the impacts. Indeed, the issue of mountain pine beetle risk will certainly have negative impacts on sensitive woodpecker species for which the beetle is a main food source. "Proposals to address fuels and insect concerns could change wildlife habitat features and impact species." DEIS at 11. | *Providing a diversity of potential wildlife habitat was identified in the Purpose and Need for the Citadel project. The Citadel project accomplishes this by meeting laws and regulations that apply to wildlife and by being consistent with Forest Plan direction, including managing toward structural stage objectives. The effects of the alternatives on wildlife are discussed in section 3.4.6 of the DEIS.*<br><br>*Mountain pine beetles are native to the Black Hills and will be present in the Forest for the foreseeable future. The goal of reducing beetle risk is not to totally eliminate beetles from the ecosystem but, rather, to prevent the loss of very large patches of trees.*<br><br>*The statement "Proposals to address fuels and insect concerns could change wildlife habitat features and impact species" does not appear in the Citadel DEIS as referenced in the comment.* |
| <u>Comment 21-3</u>: The DEIS states that one of the purposes and needs for the proposed project is to provide for wildlife habitat needs. DEIS at i, iii, 10, Appendix D-Page 2. Even though the claim is made that Alternatives B and C are enhancing wildlife habitat, we | *A narrative description comparing how each alternative is expected to affect wildlife habitat appears in the Citadel DEIS on pages 2-11 through 2-13. A table comparing the key issue indicators for wildlife habitat diversity appears on page 2-14. Analysis of the* |

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| question that claim. There is no documentation in the DEIS to substantiate this claim. The "enhanced benefits" to wildlife habitat clearly appear to be incidental to the major purposes of the project: commercial logging. Indeed, several wildlife alternatives were eliminated from detailed analysis when wildlife "treatments" were thrown into the fuel reduction alternatives. The DEIS must offer a range of reasonable alternatives which meet all the stated needs and purposes of the project, not just a single need of supplying commercial timber. | *environmental effects on wildlife appears in section 3.4.6.*<br><br>*The Citadel DEIS considered 3 alternatives in detail and another 6 alternatives that were eliminated from detailed analysis. Section 2.2.6 of the DEIS explains why these alternatives were not analyzed in detail.*<br><br>*Each alternative carried forward for detailed analysis addresses in some manner the purpose and need for the project. Each individual alternative is not expected to completely meet all of the needs identified but each alternative should move the project area toward meeting each need.* |
| <u>Comment 21-4</u>: NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives and to discuss reasons for eliminating any alternatives not developed in detail. We request the USFS analyze in detail the following alternatives:<br><br>• An alternative that does not harvest or thin any stands of structural stage 4C and 4B;<br>• An alternative that addresses fragmentation concerns on the BHNF;<br>• An alternative that proposes no overstory removal, to retain large diameter trees that are more fire resistant;<br>• An alternative that does not allow harvesting of trees greater than 10" in diameter. This alternative will ensure that an adequate amount of larger diameter trees are retained for future snag creation and for the benefit of species dependent upon larger diameter trees;<br>• Al alternative that decommissions the maximum amount of roads and ways possible within the project area;<br>• An alternative that designates all stands of structural stage 4C as MA 3.7. This alternative also proposes a nonsignificant forest plan amendment and will enhance wildlife habitat;<br>• An alternative that proposes to designate all management area prescription 5.1 within the project area as MA 4.1. This alternative proposes a nonsignificant forest plan amendment and will enhance wildlife habitat;<br>• An alternative that proposes only road decommissioning and closure, but no timber harvesting, thinning, or other vegetation treatments.<br><br>Unfortunately, nowhere in the DEIS does the USFS explain why these alternatives were rejected from any analysis, let alone detailed analysis. It is clear that | *Alternatives are typically considered during the scoping period, prior to the development of the DEIS, with input from public scoping comments. Biodiversity Conservation Alliance (BCA) did not submit scoping comments during the scoping period for the Citadel project. BCA did not submit scoping comments for the Citadel project, so we were unable to specifically address these suggested alternatives in the DEIS. Alternative A (the No-Action alternative) of the Citadel DEIS, does address many of the listed items. Both action alternatives (Alternatives B and C) would close all roads deemed unnecessary for administrative or public access. No changes to management area designation were deemed necessary in the project area.*<br><br>*Alternative C, which is analyzed in detail in the Citadel DEIS, includes actions such as meadow enhancements, hardwood enhancements, south slope treatments, ridge top treatments and reduction of open road density that are intended in improve the overall diversity and quality of wildlife habitat in the project area. Both Alternative B and Alternative C would move the project area toward the structural stage objectives established in the Forest Plan for MAs 4.1, 5.1, 5.4, and 5.6.*<br><br>*Fragmentation is not an issue considered in the Citadel DEIS. Refer to the Forest Plan FEIS.*<br><br>*All other suggested alternatives would not meet the purpose and need of the Citadel project because they each focus heavily on one aspect (road decommissioning, no harvest, size-limited harvest) and do not allow for a wide range of treatment options necessary to meet the stated purpose and need.* |

| Comment | Response |
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| alternatives that do not meet the purpose and need to "provide commercial timber" did not warrant detailed analysis and were summarily dismissed. No alternative analyzing primarily wildlife habitat needs has been considered. The USFS in the DEIS has unreasonably restricted the range of alternatives where the stated purposes and needs include "providing for wildlife habitat needs." | |
| Comment 21-5: If the USFS reconsiders any of the alternatives we propose and still reaches the conclusion that it is unreasonable or otherwise entirely inappropriate, then the USFS must discuss the reasons for eliminating these alternatives from detailed analysis. Additionally, if the USFS reconsiders a 10" diameter limit alternative and still reaches the conclusion that it is unreasonable or otherwise entirely inappropriate, then we request the USFS rigorously explore and objectively evaluate an alternative that prescribes 12" diameter limits and 14" diameter limits. Such alternatives would ensure that larger diameter trees are retained for wildlife habitat, for future snag creation, for future late successional forest creation, and down woody debris recruitment. Although we understand the USFS is proposing to leave some green trees, we request the USFS consider leaving more green trees and consider leaving green trees larger than 12" in diameter and larger than 14" in diameter as separate alternatives. Consideration of such alternatives will also ensure a well-informed decision that is fully aware of the various environmental trade-offs associated with the decision to implement the Citadel timber sale, as well as the actual environmental impacts of the decision. | *Refer to the response for Comment 21-4.*<br><br>*NEPA does not require consideration of an infinite number of alternatives, just enough to reasonably address the issues. Based on internal discussion and responses to public scoping, we believe the existing range of alternatives is reasonable.*<br><br>*Green trees will be retained on all acres treated, except where meadow enhancement or hardwood enhancement is proposed. Both action alternatives would reduce the risk of loss of green trees to mountain pine beetle infestation or high-intensity wildfire.*<br><br>*Refer also to response to Comment 21-29 regarding snags and Comment 21-12 regarding late succession.*<br><br>*The Forest Plan structural stage objectives for MAs 4.1, 5.1, 5.4, and 5.6 include an objective for retaining at least 10% of structural stage 4 trees in the "very large" (16 inches or greater DBH) size class.* |
| Comment 21-6: We also question the USFS's assumption that simple reductions in stand density will reduce mountain pine beetle risk on the BHNF and in the Citadel timber sale area. Not only has extensive past logging apparently failed to lessen the risk of future pine beetle infestation, but studies have found that infestation is not a function of stand density in the Black Hills. In a study of mountain pine beetle risk in thinned and unthinned stands on the BHNF, Schmid et al. (1991) found that there appears to be no relationship solely between stand density (i.e., basal area) and mountain pine beetle risk and susceptibility. Schmid et al. (1991) state:<br><br>The success of partial cutting in reducing MPB-caused mortality is frequently attributed to the change in host resistance created by the | *The probability of infestation by mountain pine beetle and the extent of mortality from an infestation can be lowered by simple reductions in stand density. This is not an assumption, but a scientifically demonstrated fact. For a review of much of the literature on the subject, see "The effectiveness of vegetation management practices for prevention and control of bark beetle infestations in coniferous forests of the western and southern United States: by C.J. Fettig, K.D. Klepzig, R.F. Billings, A.S. Munson, T.E. Nebeker, J.F. Negro'n, and J.T. Nowak in* Forest Ecology and Management, *volume 238 (2007, pages 24-53. These authors offer the following conclusion, among others (pg. 44):*<br><br>"4) Factors involving tree density are consistently associated with the occurrence and severity of bark |

| Comment | Response |
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| reduction in stand density (Mitchell et al. 1983). The relatively equal but moderate to severe stress levels among GSLs [growing-stock levels] observed in this study suggests that host resistance would be relatively equal among our GSLs. If host resistance is relatively equal, then differential MPB-caused mortality among various GSLs must be influenced by other factors, such as microclimate, as suggested by Bartos and Amman (1989). Host resistance by itself may not be totally responsible for the differential mortality. (p. 754)<br><br>The proposed actions do not seem to be based on any consideration of the possibility that mountain pine beetle risk is not related to stand density and consequently, fails to ensure the project meets the purpose and need. In addition, because risk is not entirely related to stand density, the USFS's assumptions underlying the proposed action, namely that logging or thinning are needed to address any purported mountain pine beetle risk, are unsupported. | beetle infestations. Management to reduce stand or landscape-level susceptibility to bark beetles must address factors related to tree density. Accordingly, thinning has long been advocated as a preventative measure to reduce the amount of bark beetle-caused tree mortality and its effectiveness for the purpose is supported by the scientific literature."<br><br>*It should be noted that most past logging was not undertaken with the specific and narrow goal to mitigate future mountain pine beetle infestations at the landscape scale. Conditions unfavorable to infestation with respect to stand density must be continued over time against growth if the beneficial effects of thinning are to be maintained. Given an infestation of sufficient size and intensity, any stand at any density can be killed.*<br><br>*The cited study by Schmid et al. has been misunderstood and its conclusions misinterpreted. Schmid et al. (1991) published a study designed to better understand the underlying mechanism(s) explaining the "differential mortality" resulting from partial cutting. Two general hypotheses have been forwarded to explain the observed reductions in beetle-caused mortality that result from partial cutting – increased host resistance and a less favorable microhabitat. Schmid et al. investigated the microhabitat hypothesis (see Bartos and Amman 1989) in a series of research papers, of which this but one. Such studies not only support, but seek to comprehend the relationship between stand density and mountain pine beetle risk and susceptibility.*<br><br>*It would be contrary to a large body of scientific knowledge to consider the possibility "that mountain pine beetle risk is not related to stand density". To reiterate,* "Factors such as stand density, basal area or stand density index, tree diameter and host density are consistently identified as primary attributes associated with bark beetle infestations." *(Fettig et al. 2007, pg. 26)*<br><br>*We believe that the preponderance of research on this subject supports this conclusion and that this represents the best available science.*<br><br>*Both biotic and abiotic factors in combination must be favorable for large mountain pine beetle infestations to occur, not all which can be manipulated by logging or other human activity. Manipulation of stand density is the most effective tool available to lower mountain pine beetle risk. This is the Silvicultural tactic known as "prevention". Prevention includes treatment strategies designed to change forest conditions that render them susceptible to bark beetle. Prevention tactics* |

| Comment | Response |
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| | *implemented before an outbreak occurs are designed to address stand susceptibility across forested landscapes. Prevention strategies encompass long-term treatments that require multiple stand entries. This series of treatments will result in reduced stand susceptibility for many years.* |
| Comment 21-7: Additionally, Alternative C (the preferred alternative) proposes to **increase** the MPB risk in areas currently at low risk (from 20% to 28%). Areas currently at moderate risk will see **increased** risk also (from 31% to 38%). This is a combined increase of risk of 15%. Yet risk to high-risk areas will be decreased only 10%. Thus, there will be a net increase in MPB risk across the project area. This is unacceptable, particularly since the net increase comes at the expense of trees (47 mmbf which is critical wildlife habitat for many species), stream health, soils, air quality, soundscapes, etc., and **cost to the taxpayers**. The Citadel project will cost the American public **$7.6 million dollars**, not an insignificant sum.<br><br>We request the USFS conduct additional assessment and analysis of the need for MPB treatments. | *Treatments proposed under Alternative C would reduce the number of acres of ponderosa pine at high risk to beetle infestation by 27% (from 10,702 to 7,759 acres). It is true that the number of acres at moderate and low risk would increase by 17% (7,432 to 8,698 acres) and 35% (4,550 to 6,146 acres) respectively. A reduction in the number of acres at high risk would be expected to result in an increase in the number of acres at low or moderate risk. Some stands that are currently at high risk will move to moderate or low risk and some stands at moderate risk will move to low risk.*<br><br>*The environmental effects of the proposed treatments are analyzed in Chapter 3 of the DEIS.*<br><br>*See response to Comment 21-6 above in reference to the need for MPB treatments.* |
| Comment 21-8: We are disappointed that under Alternative C the USFS is proposing to authorize logging in Crow Peak, an area designated MA 3.32 (Backcountry Non-motorized). Allowing the intrusion of logging equipment and the ensuing multiple truck trips, motorized saws, road building and/or reconstruction, etc. in a pristine semi-primitive backcountry setting is unacceptable. The current management goals are to downgrade roads at levels 3, 4 and 5 to level 2 for administrative use only. The Citadel project may require road building, reconstruction, and/or road maintenance in order to accommodate the activities proposed under this alternative. It is not clear from the DEIS exactly what activities are proposed and we would ask the USFS to clarify this in the FEIS. The impacts to special recreation resources, such as high scenic integrity and solitude, are unacceptable and illegal. MA 3.32 prohibits motorized travel in this management area; to allow motorized vehicles would violate the Forest Plan. Such treatments only increase the evidence of human impacts and denigrate inherent qualities of these areas. We request that the USFS comply with all guidance in the Forest Service Manual and other guidance for management in semi-primitive, non-motorized. We request that the USFS delete this provision in Alternative C. | *No logging or road building in MA 3.32 is proposed under any alternative in the Citadel DEIS. Alternative C proposes fuel reduction treatments on Crow Peak and adjacent stands to the west. These treatments would not include any commercial harvest or road construction. Prescribed fire is the most likely treatment with the potential for some hand thinning prior to burning to reduce the risk of high fire intensity and to minimize mortality of overstory trees. Site specific actions would be determined by the fuels specialist based on site conditions during preparation of the requisite prescribed fire plan. All actions proposed for the Crow Peak area are consistent with Forest Plan direction for MA 3.32.* |
| Comment 21-9: Further, we object to new roads in 4.1 | *All proposed treatments in MA 4.1 are consistent with* |

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| management areas. Allowing treatments cannot meet objectives of this MA (roaded non-motorized). The scenic integrity is high for these areas. Object to treatments in 4.1 management areas. | *Forest Plan direction. Standard 4.1-2101 states "Suitable lands are available for timber production and contribute to the allowable sale quantity." Guideline 4.1-9102 states "Motorized road travel is limited to designated routes. Designated routes will vary over time based on the need to do vegetative management. Generally the road system will be closed to motorized travel."*<br><br>*MA 4.1 is generally closed to motorized travel by the public, but is available for management activities and motorized traffic associated with those activities.* |
| Comment 21-10: We also request protection for "The Needles" area. This is an area of high scenic and aesthetic qualities. We request that if treatments are proposed for this special place, that a full assessment of all impacts be conducted before issuance of the FEIS. | *"The Needles" are located in MA 5.6 (Resource Production Emphasis). All treatments proposed for this area under both action alternatives are consistent with Forest Plan direction. The effects of treatments are analyzed in Chapter 3 of the Citadel DEIS.* |
| Comment 21-11: The USFS should manage the area surrounding Sand Creek Roadless Area as a buffer area. Sand Creek Roadless Area is quite close to the project area and may be significantly impacted by the project activities. At a minimum, we request the USFS assess and analyze impacts to the Sand Creek Roadless Area. | *No portion of the Citadel project area borders the Sand Creek Roadless Area. Analysis of effects to the Sand Creek Roadless Area is outside the geographic scope of the Citadel project.* |
| Comment 21-12: We are very concerned that the USFS is proposing to directly impact and reduce the availability of old growth forest habitat through the Citadel timber sale. Currently, according to the Phase II Amendment Final Environmental Impact Statement ("FEIS"), only around 0.22% of the entire BHNF is considered old growth. This was measured by assessing how much forest is currently in structural stage 5. Furthermore, old growth in the BHNF exists as scattered, small stands that are neither connected nor of sufficient size to support many wildlife species. In addition, many stands exist on steep slopes and/or are near roads or campgrounds. This is an extremely low amount of old growth and it is difficult to believe that any direct impacts to old growth forest would not pose significant impacts to this important habitat component, to species dependent upon this habitat (especially sensitive species), as well as to the diversity of plant and animal communities in the BHNF.<br><br>It is disturbing that in a National Forest that contains approximately .022% old growth forest, the Citadel project is proposing to "redistribute the structural stage acres out of the overabundant 4B and 4C categories into SS2 . . ." In is incomprehensible that there can be an overabundance of 4B and 4C categories on the project area, particularly if one takes a forest-wide look. | *Alternative C would not harvest any structural stage 5 (late succession or old growth) stands. Alternative B would treat selected structural stage 5 stands, approximately 163 acres total, with the goal that these stands will progress back toward late succession in the future. Treatments in these stands would move them into SS 4 rather than further back (SS 1, 2 or 3).*<br><br>*Definition of Structural Stage 5 (Late Succession) from page 68 of the Phase II Amendment: This structural stage is characterized by very large trees (16+ inches DBH). Trees are at least 160 years in age; ponderosa pine that reach this age are commonly referred to as "yellow barks". Late succession ponderosa pine may occur in dense stands, but may also grow in the open or in "park-like" stands (Mehl 1992). The lack of treatment in SS 5 in Alternative C and the inclusion of some treatment in SS 5 in Alternative B was intended to reflect this variety in ponderosa pine old growth types.*<br><br>*Aspen, birch, and spruce were not considered in the late successional definition.*<br><br>*The 2006 Monitoring and Evaluation Report, page 27, indicates that, Forest-wide, MA 4.1 currently is 40% SS 4B and 23% 4C; MA 5.1 is 32% and 10%; MA 5.4 is 27% and 13%; and MA 5.6 is 41% and 20 %. The* |

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| Also of concern, however, is that the proposed action seems premised on the assumption that the entire ponderosa pine forest of the BHNF is naturally "open and park-like," and that, to "restore" forest health and/or address fire risk concerns, extensive logging and thinning is necessary. Such an assumption, while partially true for portions of the BHNF, is not universally valid and reflects the USFS's attempt to selectively utilize science in the development of the Citadel timber sale.<br><br>Indeed, much scientific information exists showing that ponderosa pine forests across the western United States, including those in the Black Hills, are naturally more diverse in terms of structure and fire regimes. In particular, while some ponderosa pine forests are naturally more open and park-like and naturally affected only by surface fires, particularly those in the southwest and at lower elevations, many ponderosa pine forests can be more dense and naturally (if not consistently) affected by relatively infrequent, stand-replacing fires, or fall within a mixed-severity fire regime (Baker and Ehle 2001, Schoennagel et al. 2004). In fact, Shinneman and Baker (1997) report much of the BHNF was likely more influenced by stand replacing fires than surface fires, which resulted in larger, more continuous tracts of dense, old forest. Such a finding is not anomalous. Baker and Ehle (2001) state:<br><br>> Longer fire rotations and spatially patchy fires also suggest that a greater diversity of forest structures probably existed in the pre-Euro-American ponderosa pine landscape, possibly leading to some crown fires. Dense thickets of regenerating trees or dense old patches of trees may have been a part of the pre-Euro-American ponderosa pine forest landscape (e.g., Shinneman and Baker 1997), since there is more opportunity for these to have occurred. (pp. 1223-1224)<br><br>Schoennagel et al. (2004) state:<br><br>> There is also evidence of mixed-severity fire regimes that predate fire suppression in some forests dominated by ponderosa pine, and even in pure or nearly pure ponderosa pine stands at low to mid elevation (Veblen and Lorenz 1986, Mast et al. 1998, Kaufmann et al. 2000, Ehle and Baker 2003).<br><br>> Historically, forests that experienced mixed-severity fire regimes had variable densities of ponderosa pine, Douglas fir, grand fir, and | *structural stage objectives identified in the Forest Plan are 25% in SS 4B and 5% in SS 4C for each of these MAs. All four of these MAs contain an excess of structural stages 4B and 4C Forest-wide.*<br><br>*Please refer to the Forest Resources section of the Citadel DEIS (section 3.4.1) for a discussion of structural stages both within the project area and across the Forest.*<br><br>*The action alternatives are not based on an assumption that the entire Black Hills historically had frequent, low-intensity fires. Currently, there are three general types of Fire Regimes in the Black Hills: Frequent, Low-severity Fire Regime; Infrequent, High-severity Fire Regime; and Mixed Severity Fire Regimes. The EIS discusses fire regimes on page 1-3, with reference to Shinneman and Baker (1997), Brown (2003), and Brown and Sieg (1996).*<br><br>*Specific literature cited in this comment including Brown (2003), Graves (1899), McAdams (1995), and Shinneman and Baker (1997) was cited in the Phase II Amendment FEIS, which is cited in the Citadel DEIS with regards to this matter. All other references cited in this comment have been considered.* |

| Comment | Response |
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| western larch, depending on their location. These forests constituted a mosaic of even-aged stands resulting from stand-replacing fire with uneven-aged stands that experienced low-severity surface fires and episodic tree regeneration (Arno 1980, Brown et al. 1999, Kaufmann et al. 2000). (p. 670)<br><br>Studies of Rocky Mountain ponderosa pine forests invariably report more diversity in terms of structure and fire regimes (e.g., Baker and Ehle 2001, Ehle and Baker 2003, Graham 2003). Other studies and reports from the BHNF have similarly reported that the ponderosa pine forests of the Hills are not always open and park-like, and that naturally dense growth is a natural phenomenon in the Black Hills (Graves 1899, Duthie 1930, McAdams 1995). As Duthie (1930) stated:<br><br>The western yellow pine of the Black Hills has a peculiar habit, when the old forest has been killed or cleared away, of reproducing in dense thickets. I say this is a peculiar habit because it is unlike the behavior of the same pine in forests farther west where the seedlings will not stand crowding, and come up sparsely. But in the Black Hills the western yellow pine has acquired a characteristic of the lodgepole pine in that the seedlings come up in dense stands crowding each other, yet clinging tenaciously to life until growth practically reaches a stalemate….Some of these dense stands may be found where the trees are two hundred years old and the deadlock persists.<br><br>The DEIS does not seem to reflect scientific views suggesting the ponderosa pine forests of the BHNF likely fall within a mixed-severity fire regime despite supporting scientific evidence. This is supported by the fact that few of the studies we cite are not referenced in the DEIS Bibliography and Literature Cited section, suggesting that USFS specialists have not even consulted these sources. Schoennagel et al. (2004) cite the ponderosa pine forests of the Black Hills as an example of a mixed-severity regime. In any event, the proposed actions do not seem to be based on a serious or objective consideration of the fact that the ponderosa pine forests of the BHNF may be more diverse.<br><br>The USFS in past timber sales has relied heavily on the work of Peter Brown to refute the findings of Shinneman and Baker (1997), as well as the notion that the Black Hills likely experienced stand-replacing fires and was not universally “open and park-like.” We note that Brown’s work is not included in the Bibliography | |

| Comment | Response |
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| and Literature Cited section of the Citadel DEIS, so we assume that his work was not relied upon in analysis for the DEIS. If the USFS is continuing to rely on Brown's work, this reliance is misplaced, as Peter Brown's dissertation suggests otherwise. Brown (2003) states:<br><br>> A prevailing model for historical conditions in ponderosa pine forests is that frequent, episodic surface fires maintained open, low-density, uneven-aged forests. However, this model does not apply uniformly to ponderosa pine forests in the Black Hills of southwestern South Dakota and northeastern Wyoming. <u>Infrequent stand-replacing fires also occurred and apparently resulted in large landscapes of even-aged trees</u>. (p. 61, emphasis added)<br><br>Peter Brown's dissertation was based on research on the Limestone Plateau, which the USFS often points to as evidence that stand replacing fires did not historically occur on the BHNF. It is difficult to reconcile contradiction of Peter Brown's conclusions. | *Peter Brown's research is cited in the Citadel DEIS and his work included in the "References" section of the document, page 5-4.*<br><br>*The Citadel DEIS, "Fire and Fuels" section does not deny that stand-replacing fires were part of the historic fire regime (page 3-41). Nor does the DEIS rely solely on Brown's work for reference. Several other authors, including Shinneman and Baker, are referenced throughout the DEIS.* |
| In addition, Baker and Ehle (2001) call into question the accuracy of several fire history studies on the BHNF, including Brown and Sieg (1996), Brown and Sieg (1999), and Brown et al. (2000). In particular, the authors raise concerns over the level of uncertainty associated with assessing surface fire histories in ponderosa pine forests. Baker and Ehle (2001) state:<br><br>> The uncertainty we identify in fire-history results suggests that present concepts of the role of fire in maintaining the structure of ponderosa pine forests are less certain. Surface fire is still very important to these forests. However, the longer mean FIs [fire return intervals] and fire rotations that certainly occurred, and the spatially patchy nature of fire, somewhat diminish the magnitude of control of forest structure by fire relative to present conceptions of fire's importance in ponderosa pine forests. (p. 1223)<br><br>The USFS has yet to address the findings of Baker and Ehle (2001) as they relate to the uncertainty in surface fire history studies that have been done in the BHNF. This alone suggests the BHNF has not appropriately developed proposed actions that truly meet the purpose and need, or that the purpose and need itself is fatally flawed.<br><br>Obviously, the BHNF is much more diverse than the USFS gives it credit, experiencing both surface and | *Baker and Ehle (2001) relates to the uncertainty in surface fire history studies that have been done in ponderosa pine forest in the western United States, not specifically in the Black Hills. A broad range of literature, both prior to and after this publication, has been examined and therefore we believe the best* |

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| stand-replacing fires, and supporting both open, park-liked stands and large tracts of dense old growth. While the USFS has turned these scientific views into opposing views, in fact they are mutually inclusive and indicate that forest management must take a more complex view of the forest in order to restore forest health and adequately protect native species and their habitats.<br><br>The implications of the USFS's assumptions are substantial and of great concern. In particular, because the USFS seems to assume the entire BHNF naturally and entirely falls within a low-severity fire regime, the agency also asserts that the Citadel timber sale area is outside its range of natural variability, or, as the USFS claims, "unhealthy." As a result, the USFS is proposing extensive logging and thinning to "restore" the forest through the timber sale. Such a proposal is ill-founded given that scientific data strongly indicates the BHNF falls within a mixed-severity fire regime, and that, while some areas may be outside their range of natural variability, such a condition is not consistent across the entire forest. The results of ramped up logging and thinning in the Citadel timber sale area could therefore be seriously detrimental to the health of the BHNF. As Schoennagel et al. (2004) state, "…current fire regimes and stand densities in mixed conifer forests are <u>likely to be within the historical range of variability, or at least are not likely to be as far outside this range as those in the dry ponderosa pine forests discussed above</u> (Veblen 2003)" (p. 671, emphasis added). The authors go on to state:<br><br>> Fuel-reduction treatments (mechanical thinning and prescribed burning) may effectively reduce fire severity under moderate weather conditions, but these treatments <u>may not effectively mitigate fire behavior under extreme weather conditions and may not restore the natural complexity of historical stand and landscape structure</u>. (p. 673, emphasis added)<br><br>Coupled with the findings of Shinneman and Baker (1997) and Baker and Ehle (2001), as well as other studies that have documented mixed-severity fire regimes in other ponderosa pine forests (e.g., Ehle and Baker 2003), the best available scientific information strongly indicates that efforts to control or alter future fire behavior through fuels reduction treatments will not only be ineffective in the Citadel timber sale area, but that such efforts will only lead to detrimental, not beneficial, impacts to the Black Hills ecosystem and to species of wildlife that depend on the naturally complex and diverse ponderosa pine forest structure of the BHNF. We note that many of these scientific studies | *available science has been reviewed with respect to this topic. Please refer to the Best Available Science addendum and the references in the Fire/Fuels Specialist Report for specific works cited.*<br><br>*The range of natural variability in the Citadel assessment was determined using the term "condition class". Condition class has been developed to describe the degree to which the composition and structure of plant communities has departed form the historic fire regime. As stated in the Fuels Specialist Report "Within the Black Hills, much of the range of ponderosa pine would meet the conditions for severe crown fire. Thus, much of the forested landscape would meet the characteristics of Condition Class II or III". These conditions classes have been significantly altered from their historic fire regime. According to the Phase II FEIS "Under these conditions the goals and methods of fuel reduction and ecological restoration may converge. Restoration of open, low density forest stands and surface fire regimes over portions of the Black Hills landscape is desirable to meet ecological objectives and to reduce fire hazard" (FEIS pg. III-341). The topic is discussed in more detail in the Phase II Amendment FEIS, pages III-338 through III-343.* |

| Comment | Response |
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| were not even consulted by the USFS in its environmental analysis and assessment.<br><br>All in all, the DEIS and Citadel timber sale does not seem to be based on an objective look at relevant scientific information regarding natural forest conditions and fire regimes in the BHNF and in particular the timber sale area. The assumptions underlying the proposed action are thus flawed and indicate the purpose and need will not be met by the proposed action.<br><br>Furthermore, we question how the BHNF assessed impacts to late successional forest. In other words, how did the BHNF determine that impacts to late successional forest would not be significant? We are also concerned that the DEIS fails to adequately analyze the cumulative impacts to late successional forest. For instance, although the DEIS claims there would be no adverse cumulative impacts, wouldn't the timber sale, in harvesting stands of SS 4C and 4B, affect the future abundance and distribution of old growth forest? Why wasn't this cumulative impact considered?<br><br>Regardless of the BHNF's assumptions about old growth on the Black Hills, it is undeniable that the Citadel timber sale will have direct and significant impacts on old growth, as well as impacts on future old growth abundance and distribution. Disclosing such impacts is vital to ensuring the public understands the impacts of the timber sale and that the decisionmaker is well informed. Disclosing such impacts is also important given that scientific studies have determined the Black Hills once naturally supported more old growth forest (see e.g., Shinneman and Baker 1997, Baker and Ehle 2001).<br><br>Finally, although the USFS claims that under the Phase II Amendment, old growth will increase, it's important to note that under the Citadel timber sale, old growth will not increase. Instead, it will be reduced dramatically. This seems to indicate that the USFS erred in concluding the Phase II Amendment will actually lead to increases in old growth forest. | *The Citadel analysis considered the best available science. Resource specialists have reviewed all known pertinent literature including the citations provided by Biodiversity Conservation Alliance.*<br><br>*Neither action alternative would result in a decrease in the percentage of ponderosa pine in SS 5. Alternative C would in fact raise the percentage in SS 5 from 5% to 7% (See DEIS, Table 2-3).*<br><br>*Late succession forest develops over time. Alternatives* |

| Comment | Response |
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| | *B and C would leave, respectively, 8,550 acres and 7,434 acres of Structural Stage 4B and 4C that could develop into late succession forest in the future.* |
| Comment 21-13: The DEIS discloses that "some aspen stands do not seem to be healthy in the Citadel analysis area." "Cattle, elk, and deer browse continually on the aspen regeneration causing the young aspen to remain short and shrub-like." Other symptoms are appearing in aspen foliage which suggest diseases are attacking aspens as well. DEIS at 63. Clearly, inclusions of pine and spruce in aspen stands are not the only issue for aspen stand health. Taking a single treatment approach of removing pines and spruce will undoubtedly not correct all, if any, of the issues facing aspen stands on the project area. We recommend that the USFS analyze the impacts of livestock grazing on aspen stands. The most recent range condition, trend, and inventory for the area was conducted in 1994. The USFS should also analyze the infestations to determine the cause and propose treatments which will be effective. We disagree that removal of pines and spruce alone will ensure healthy aspen stands. | *The quoted material in this comment does not appear anywhere in the Citadel DEIS. Livestock grazing is presented in section 3.2 as a past, present and reasonably foreseeable future action considered for cumulative effects analysis. Hardwood communities are discussed on pages 3-38 and 3-66.*<br><br>*The Citadel project does not propose that removing conifers from aspen stands will ensure healthy aspen stands. Removing conifers from aspen stands provides a better growing environment for aspen by reducing competition for light, moisture and nutrients. Removing conifers also moves toward achieving Forest Plan Objective 201: Manage for a minimum of 92,000 acres of aspen. See Phase II FEIS, page III-32 for a discussion on hardwood ecosystems.*<br><br>*Alternative A, the no-action alternative, does not include any conifer removal from aspen.*<br><br>*Insect and disease surveys in the Black Hills are conducted by Forest Health personnel from the Rapid City Service Center and are outside the scope of this analysis. Forest health surveys on aspen and birch, forest-wide, are tentatively planned to begin in the summer of 2007 (Bill Schaupp, pers. comm.).* |
| Comment 21-14: Aspen restoration is a focus of the stated Purpose and Need. Is aspen restoration feasible, given current drought conditions? Has or will analysis be done with this in mind? | *The stated Purpose and Need in the Citadel DEIS 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" (DEIS, page 1-6). Although aspen restoration is one method of achieving some of these Purpose and Need elements (reduction of fire risk and enhancement of wildlife habitat, specifically), aspen restoration is not stated as a focus of the Purpose and Need for the Citadel project.* |
| Comment 21-15: It is also notable that the percent increase in aspen stands under the proposed action (Alternative 2) will be only 8%. Alternative 3 would achieve a 22% increase in aspen stands. Since aspen | *This comment does not appear to apply to the Citadel project. The Citadel alternatives are identified by letter, not number, and aspen restoration is not identified as one of the significant issues in the Citadel DEIS.* |

| Comment | Response |
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| restoration is one of the 3 significant issues identified for the project, we would expect this issue to be addressed more aggressively in the proposed action. We reiterate that the primary purpose of the project appears to be commercial timber harvest. The DEIS and Alternative 2 would not meet the purpose and need of the project. | *In any case, both action alternatives would lead to an increase in aspen acres (approximately 86 additional acres under Alternative B and 161 acres under Alternative C) and move toward Forest Plan Objective 201: "Manage for a minimum of 92,000 acres of aspen (double current aspen acres)…."* |
| Comment 21-16: Alternative C also proposes prescribed burns "which in the short-term would create additional foraging opportunities for big game . . ." We have two concerns regarding prescribed burns: (1) what will be the consequences long-term; and (2) what impact will prescribed burns have on a forest already stressed by years of drought. The DEIS has not addressed these issues, yet they are of utmost importance. It is not appropriate to claim they will create additional forage for big game in the short-term without scientific documentation to back up the claim and without disclosure of significant negative impacts. The FEIS must assess and analyze the impacts of prescribed burns. | *Based on past experience in the Black Hills, it is reasonable to expect that prescribed burns will result in increased grass, forb, and shrub growth in the following growing season, which provides additional forage for big game. Over the long-term, prescribed fire is expected to reduce surface fuels and open the understory, thereby reducing crown fire hazard. Prescribed burns are conducted only when site conditions are within a pre-determined window of opportunity to minimize the risk of overstory mortality.*<br><br>*Fuel reduction treatments, including prescribed fire, are presented in section 3.2 as a past, present and reasonably foreseeable future activity to be considered for cumulative effects.*<br><br>*A discussion of the effects of the proposed fuels reduction treatments is located in section 3.4.2, beginning on page 3-41 of the Citadel DEIS and also appears in the Fire/Fuels Specialist Report.* |
| Comment 21-17: The DEIS indicates that seven sites where Cooper's mountainsnail is found in the project area are within proposed treatments areas. There are other snail populations in the project area. This an R2 sensitive species. We question that snail colonies would be protected from adverse effects of the project. We specifically request the USFS to provide full analysis and documentation for this claim. If full protection is not afforded, the project will violate the Forest plan.<br><br>It is inappropriate to conclude that all action alternatives are consistent with Forest Plan Standard 3103 to ensure protection of sensitive snail species, particularly in light of the disclosure in the DEIS. We reiterate that full analysis of the Cooper's mountainsnail has not been conducted and the DEIS is therefore flawed. As a sensitive species, the Cooper's mountainsnail, and other *Oreohelix* species found on the project area, are entitled to the same protections as listed species. | *The analysis of effects to Cooper's mountain snail appears beginning on page 3-76 of the DEIS. As stated in the analysis of project effects, "There are seven sites where Cooper's mountain snails have been located within a proposed treatment unit in the Citadel project area. Treatments are not proposed within the riparian area, except for prescribed fire, but are proposed in the surrounding uplands. In addition there are other snail locations in the project area, but no treatments are proposed nearby."*<br><br>*Design criteria, located in Appendix C of the DEIS, are in place to protect both known and potentially newly discovered locations of Cooper's mountain snail from project activities.*<br><br>*Standard 3103 states "Manage known sensitive species of local concern snail colonies…" No SOLC snail colonies have been located in the Citadel project area.*<br><br>*No other Oreohelix species of snail has been located in the Citadel project area.* |
| Comment 21-18: The MIS analysis and assessment fails to present adequate population trend data. For example, for the brown creeper, the DEIS states only that since 1995 brown creeper habitat has declined by one percent. | *Concerning the brown creeper – refer to the Forest FY2006 monitoring and evaluation report. Habitat trend is stable. The Rocky Mountain Bird Observatory conducts bird counts in the Black Hills. These counts* |

| Comment | Response |
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| The have low abundance throughout the Black Hills. We are concerned that under the action alternatives habitat would decrease significantly. We have the same or similar concerns about other MIS species. The DEIS disclosures to not support the conclusions. | *are referred to in the Wildlife Specialist Report. The RMBO is in the literature cited section under Panjabi and Beason in both the Wildlife Specialist Report and the Citadel DEIS. The Citadel project complies with Forest Plan direction for MIS.*<br><br>*Refer to the Phase II Amendment FEIS, which the Citadel DEIS is tiered to, for other MIS species.* |
| Comment 21-19: The DEIS neither presents nor references population data that would provide a context for the determination that the viability of sensitive species would not be negatively impacted and/or jeopardized as a result of the Citadel timber sale. Additionally, the DEIS fails to even explain whether a viable population of northern goshawk, American marten, black-backed woodpecker, northern leopard frog, Black Hills redbelly snake, Cooper's mountainsnail, American three-toed woodpecker, flammulated owl, Townsend's big earred bat, and fringed myotis currently exists on the BHNF. A viable population is defined at 36 CFR § 219.19 as "one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area." As it is, neither the 1997 Revised Forest Plan, 2001 Phase I Amendment, or 2005 Phase II Amendment explain what constitutes a viable population of marten, goshawk, or black-backed woodpecker, and other species, and whether viable populations actually are in existence. The BHNF has a duty to determine and disclose information regarding viability if it is going to assert that the Citadel timber sale will not jeopardize the viability of these species.<br><br>The failure to disclose whether sensitive species are currently viable is further disconcerting since scientific studies have clearly established general concepts of what constitutes viable populations of vertebrate species. For instance, Reed et al. (2003) generally found "that a minimum habitat area capable of supporting approximately 7000 sexually mature adults is required to maintain long-term minimum viable populations of vertebrates in the wild" (p. 27). Given this scientific information, we request the Forest Service explain whether enough habitat exists to support viable populations of sensitive species and whether viable populations even exist. | *Refer to the Citadel BA/BE for determinations and rationale for R2 Sensitive Species. Species viability is discussed in these sections.*<br><br>*Species viability was evaluated in the Phase II Amendment. Refer to the Phase II Amendment FEIS – Appendix C (Biological Assessment/Biological Evaluation), pages 153-275.*<br><br>*Viability is addressed at the Forest scale in the Phase II FEIS and the Citadel project is consistent with the Forest Plan as amended by Phase II.*<br><br>*Refer to response to Comments 21-48 and 21-57.* |
| Comment 21-20: Forest Plan Objective 221 states that the BHNF will "[C]onserve or enhance habitat for R2 sensitive species and species of local concern." The | *The Forest Plan provides additional direction for the northern goshawk. Standard 3108 refers to identification of nest areas, of at least 180 acres, around* |

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| DEIS divulges that the preferred nesting habitat for northern goshawk would decrease. DEIS at 3-70. Among the heaviest structural stages to be treated are 4B and 4C. Forest Plan Objective 221 does not state that the USFS should conserve or enhance *existing nesting habitat* for goshawks; it directs that habitat must be conserved or enhanced, whether there are goshawks on it or not. The USFS should therefore protect more of the project area for goshawk habitat. The action alternatives in the DEIS would violate FPO 221. The cumulative impacts discussion also entirely fails to discuss the impacts of recent fires, which have affected well over 10% of the entire BHNF. We are very concerned that fires have limited the availability of nesting habitat and that the Citadel timber sale could pose significant cumulative impacts to goshawk nesting habitat. | *historically active nests. Three historic goshawk nest areas were identified in the Citadel project area.*<br><br>*Both action alternatives retain areas of Structural Stage 4B and 4C which may provide suitable goshawk nesting habitat.*<br><br>*Refer to the Citadel BA/BE for a more thorough analysis of the northern goshawk. The potential for impacts from wildfires are mentioned in the analysis. None of the recent fires have impacted historic goshawk nests in the Citadel project area. The cumulative effects analysis for this project was not completed for the entire Black Hills National Forest. However, the Phase II FEIS effects analysis did account for the recent large fires on a Forest-wide scale.* |
| <u>Comment 21-21</u>: We are also very concerned that, given the impacts of recent fires, timber may be harvested from the Black Hills at an unsustainable rate and may be negatively affecting sensitive species like the northern goshawk and others. This concern derives from the fact that the current Allowable Sale Quantity and sustainable yield calculations were based on a suitable timber base that included areas that have been entirely burned and no longer contribute any actual timber to the suitable base. Proportionately, less timber is now available in the BHNF, yet all indications are that the USFS harvesting at or near the same rate allowed under the 1997 Forest Plan. It is difficult to see how maintaining the status quo in this case can possibly meet NFMA's sustained yield mandate and/or adequately protect wildlife according to laws and regulations. We request the USFS fully explain how it can possibly protect wildlife dependent on old growth and/or relatively undisturbed forest habitats in light of strong indications that timber is being harvested at an unsustainable rate from the BHNF. | *The effects of recent fires were considered in the analysis of timber production in the Phase II Amendment FEIS. The effects of each alternative in the Phase II FEIS were analyzed based on goals, objectives, standards and guidelines specific to each alternative. The amount of timber produced under any one alternative would be affected by the specific direction included in that alternative. Reference Phase II Amendment FEIS 3-8.3 (pp. III-382 through III-385), Appendix B 2.1 (p. B-9), Appendix C (p. C-233) and November 1, 2006 W.O. Appeal Decision letter to R2 Regional Forester.*<br><br>*Species viability was analyzed in the Phase II Amendment FEIS BA/BE. The Citadel project area is of too small a scale to conduct a proper analysis of species viability. Refer to response to Comments 21-19.*<br><br>*The effects of each Phase II Amendment alternative on late succession forest and late succession dependent species was analyzed in the Phase II Amendment FEIS. See response to Comments 21-55 (Forest-wide late succession) and 21-12 (Citadel project area late succession).*<br><br>*Analysis of the ASQ was not included in the Phase II Amendment and is an issue that would be reanalyzed under a Forest Plan revision. See response to Comment 21-67 (logging sustainability).*<br><br>*See response to Comment 21-20. The BA/BE for the Phase II Amendment did account for habitat losses from fires, and did evaluate effects of implementing the Phase II Amendment.* |
| <u>Comment 21-22</u>: We also question how the BHNF assessed impacts to northern leopard frog, flammulated | *Standard 3116 states "Avoid creating barriers (e.g., new open roads) between red-bellied snake hibernacula* |

| Comment | Response |
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| owl, and Black Hills red-bellied snake. Timber harvest, slash/fuels disposal projects, and disposal of existing down woody material will continue to reduce adult foraging habitat for the northern leopard frog and adversely affect dispersal. Similarly, timber harvesting, fuel treatments, and thinning may adversely alter habitat where the Black Hills redbelly snake is present. Although the USFS denies that there is a flammulated owl population in the Black Hills, it nevertheless has been recently observed in the Black Hills, suggesting that a population may exist. It is unclear whether Forest Plan Standard 3116 will be complied with regarding these species, but we are doubtful. Although the DEIS claims that this Standard will not be violated, there is no information or analysis presented in the DEIS to suggest this is accurate. | *and wetlands".*<br><br>*This standard applies to the snake specifically and it will be followed under the action alternatives.*<br><br>*Timber harvest and vegetative treatments should not decrease foraging habitat for the leopard frog. Grasses and insects may increase due to meadow enhancement treatments proposed under Alternative C.*<br><br>*There are numerous Forest riparian standards and guidelines that will be followed under any of the action alternatives. BMPs will be enforced. Therefore, riparian areas will be protected from many activities. Any areas found to have sensitive species present such as the leopard frog and/or redbelly snake sould be maintained. Refer to the Wildlife Specialist Report for objectives, standards and guidelines.*<br><br>*Refer to the BA/BE for the Citadel project for more analysis on R2 Sensitive Species.* |
| Comment 21-23: The analysis and assessment of impacts to sensitive species is also lacking in that it fails to disclose how past, present, and reasonably foreseeable timber sales impact these species. Of particular concern is that past timber sales, such as Moon, Mallo, and Stateline II, have likely impacted individuals of these species. Indeed, in virtually every biological evaluation prepared for every timber sale on the BHNF, the USFS concludes that individuals of these species will be impacted. These impacts add up, or are cumulative, and must be considered in light of the direct and indirect impacts, as well as the USFS's duty to maintain viable populations of native vertebrate species. | *Direct, indirect and cumulative effects to R2 Sensitive Species are analyzed in the Citadel BA/BE. The timber sales referenced in the comment did not occur within the Citadel project area, nor were they located within the Northern Hills Ranger District. Past timber sales that have taken place within the Citadel project area are listed on page 3-3 of the DEIS and were considered in the analysis of direct, indirect and cumulative effects.*<br><br>*Viability forR2 Sensitive Species is discussed in the Phase II Amendment FEIS, Appendix C.* |
| Comment 21-24: We raise the same, or similar, concerns with respect to Species of Local Concern (SOLC), particularly Atlantis fritillary, sharp-shinned hawk, Cooper's hawk, pygmy nuthatch, and northern flying squirrel, that we raised above in our comments on Sensitive Wildlife. The analysis reveals negative impacts almost across the board for SOLC from the proposed Action Alternatives, as well as those which occurred from past timber and grazing activities. It is unclear how the DEIS can conclude that the Action Alternatives will not result in a loss of viability nor cause a trend toward federal listing. These cumulative impacts are simply glossed over, with the BHNF having no idea whether viable populations of these species currently exist or what degree of impacts will cause loss of viability. We again remind the USFS of its duty to maintain viable populations of native species under the | *For these SOLC, the Phase II Amendment FEIS determined that they should persist across the Forest if Forest Plan standards and guidelines are followed. Both action alternatives in the Citadel DEIS would adhere to Forest Plan standards and guidelines. Therefore, these species are likely to persist on the Forest.*<br><br>*Loss of viability and trend toward federal listing are discussed in determination for R2 Sensitive Species, which are located in the Wildlife Specialist Report.* |

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| forest plan. | |
| Comment 21-25: While the USFS has claimed that the Black Hills red-backed vole is widespread and abundant on the BHNF, the agency has not come forward with any supporting documentation or analysis. There is no mention of this mammal subspecies whatever in the DEIS, even though it is very likely an important prey species on the forest. It is incumbent upon the USFS to address impacts to this mammal and to fully protect the species and its habitat. This has not been done. | *The red-backed vole is not currently a federally listed threatened or endangered species, an R2 Sensitive Species, Black Hills National Forest management indicator species, or a species of local concern. These are the species that are analyzed in the Wildlife Specialist Report and BA/BE, along with migratory birds.* |
| Comment 21-26: Despite paying lip service to focusing on wildlife habitat needs, the two action alternatives do little in this regard. Alternative C, the preferred alternative, expands silvicultural treatments to more intensively thin stands, particularly on south slops "which are favored by big game, especially during the winter . . ." If these areas are big game winter habitat already, we have several concerns. First, big game winter habitat has been selected by the animals because it is the best available forage for winter survival. We fail to understand why the USFS believes it can improve upon what the species have already chosen as the best available. Second, the impacts of heavy logging activities will actually be quite negative to big game for the duration of the project. | *The areas identified as "big game winter range" in the Citadel project area are those areas established as MA 5.4 (Big Game Winter Range) in the Forest Plan. MA 5.4 direction calls for managing toward a vegetative mosaic across these areas, using timber harvest and prescribed fire as the primary tools for improving big game habitat.*<br><br>*Both action alternatives adhere to MA 5.4 and overall Forest Plan direction.*<br><br>*The predominant big game in the area are elk, white-tailed deer, and mule deer. Elk and mule deer are not specifically analyzed in the Wildlife Specialist Report because they are not established as R2 sensitive species, management indicator species, or species of local concern. White-tailed deer are analyzed as a management indicator species. This analysis is located in Ch. 3 of the DEIS as well as in the Wildlife Specialist Report.* |
| Comment 21-27: We are concerned that no analysis was conducted for impacts to the black bear and its habitat. While the USFS persists in its claim that there are no black bear on the BHNF, the South Dakota Game, Fish and Parks Department acknowledges reports of bears in the Black Hills and a bear track has been verified in the state. The SDGF&P has begun developing protocol for dealing with black bears, while the USFS continues to hide from the issue. In our scoping comments we requested that the USFS consult with the SDGF&P and other concerned agencies to determine the potential existence of black bears on the BHNF. The agency must protect bear habitat to ensure that if, or when, the species is restored to the BHNF, it can establish stable and viable populations with adequate habitat. | *The black bear is not currently an R2 sensitive species, a Black Hills National Forest management indicator species or a species of local concern. These are the species that are analyzed in the Wildlife Specialist Report and BA/BE along with migratory birds.* |
| Comment 21-28: The Phase II Amendment inappropriately relies upon Objective 211 to ensure sufficient snag densities across the BHNF. As an "objective," however, this requirement fails to provide any protection for snag-dependent wildlife. Indeed, | *Refer to response to Comments 21-50 through 21-54 on Phase II snag direction, 21-49 on Forest Plan Objectives and 21-29 on snags.*<br><br>*Black-backed woodpeckers are discussed in the Citadel* |

| Comment | Response |
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| "objectives" are voluntary courses of action that impose no requirement for the USFS to actually maintain sufficient snag densities.<br><br>However, even if it were appropriate for the USFS to rely upon Objective 211, Objective 211 is flawed because it fails to ensure sufficient habitat is provided to ensure viable populations of snag-dependent wildlife. Objective 211 requires the USFS to ensure only 3 snags per acre. The USFS itself recognizes, however, that many wildlife need up to 8 or more snags per acre across the BHNF. Sensitive woodpecker species, like the black-backed woodpecker, require over 24 snags per acre in burned habitat (Anderson 2003).<br><br>The USFS claims that "[I]f 3 snags are provided on average, some areas will have none or few [snags]; other areas will likely have 6, 8, or more snags per acre (from fire, insects, disease, etc.)." Phase II Amendment FEIS at D-34. This claim is unsupported. For one thing, in selecting Alternative 6 as the Phase II Amendment, the Regional Forester explicitly stated that the goal of the Amendment would be to reduce the risk of fire, insect, and disease. It is contradictory for the USFS to claim that "fire, insects, disease, etc." will provide sufficient snag habitat when the whole purpose of the Phase II Amendment is to reduce the occurrences of these natural events.<br><br>Second, and as a practical matter, if the USFS is only required to maintain an average of 3 snags/acre, there is actually nothing in the Phase II Amendment that requires the agency to maintain up to 6 or 8 snags/acre on any portion of the BHNF. As the USFS itself states, "some areas will have none or few [snags][.]" Phase II Amendment FEIS at D-34. This turns 36 CFR § 219.19 on its head and flatly contradicts the Chief's 1999 decision on appeals of the BHNF Revised LRMP. Not only does Objective 211 fail to ensure a sufficient amount of snag habitat to ensure the viability of native species, like the black-backed woodpecker and American three-toed woodpecker, but it fails to ensure that habitat is well-distributed. | *DEIS on pages 3-72 through 3-73 and the American three-toed woodpecker is discussed on pages 3-77 through 3-78.* |
| Comment 21-29: But even if Objective 211 were adequate to snag habitat to ensure species viability, the DEIS reveals that snag densities in the project ***don't even meet the low requirements of Objective 211*** DEIS at 100. Snag densities in the project area ranged from 0.58 to 2.36 per acre. This is unacceptable as it violates not only the already inadequate Objective 211, but also the duty of the USFS to maintain viable populations of native species on the BHNF. | *Objective 211 pertains to management areas across the forest. It does not pertain to project areas other than in standard 2301, which mentions meeting Objective 211 within a project area.*<br><br>*The snag data presented in the comment appears to be from a different source than the Citadel DEIS. Snags are discussed in the Citadel DEIS on page 3-68.*<br><br>*The quotes in this comment also appear to be from a* |

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| Although the USFS may claim that, through the Citadel timber sale, all snags will be retained, this is actually not the case. According to the DEIS, the cutting of snags will be allowed for "safety hazards during operations." DEIS at 101. Thus, through the Citadel timber sale, the USFS is explicitly allowing the cutting of snags. The DEIS also states that "[P]roposed fuel treatments along with other vegetative treatments and harvest have a slight potential to decrease existing snag numbers" and that "any loss of snags would be expected to be negligible." DEIS at 111. The agency's claim that all snags will be retained is erroneous. | *document other than the Citadel DEIS, as these statements do not appear at the referenced page numbers. Though some snags may be lost due to safety issues and vegetative treatments (unintentionally); snags may be created due to prescribed fire and vegetative treatments. There is no claim in the EIS that all snags will be retained. Snags would only be cut if they are deemed a safety hazard during operations which is consistent with standard 2301. Cutting of snags for firewood is not allowed within the project area, which is consistent with standard 2304. It is expected that snag densities would increase in the project area under any alternative due to mountain pine beetle caused mortality. All alternatives would comply with amended Forest Plan snag direction, including standards 2301, 2304 and 2305.*<br><br>*The FY2006 Forest Monitoring Report states on page 30: "The addition of recent wildfires and insect tree mortality results in above 3 snags per acre well dispersed across the forest.* |
| <u>Comment 21-30</u>: Snag diameters on the BHNF are extremely low and are already insufficient to meet the needs of wildlife (Spiering and Knight 2004). The existing conditions indicate that snag-dependent wildlife are essentially living on deficit habitat, a situation that will only lead to declines and potentially extirpations of snag dependent wildlife. Spiering and Knight (2004) estimate that of the snags in the BHNF, snags greater than 20" dbh average only 0.2 per acre. This isn't even a whole tree. Adding to that, snags between 15 and 19" dbh average only 0.5 per acre. Together, snags greater than 15" dbh average 0.7 per acre across the BHNF.<br><br>*(graph omitted)*<br><br>Several species of wildlife are reported to depend on larger diameter snags, most with diameters of around 20" or greater, but at least greater than 15" dbh. Indeed, Spiering and Knight (2004) report that wildlife use of snags increased as diameter increased. In addition, all species of wildlife that require large diameter snags invariably require more than one per acre. The welfare of the pygmy nuthatch is of particular concern given its extremely low numbers in the BHNF (Panjabi 2001, 2003, 2004). Elsewhere, the species is common in ponderosa pine forest (Ghalambor 2003). This strongly indicates that past and present management has led to significant declines in habitat for the species, a conclusion supported by scientific studies on the nuthatch. Indeed, the pygmy nuthatch was one of four species that showed a significant reduction in population density with a reduction in snags (Scott 1979). | *Refer to response for Comments 21-19 and 21-29.*<br><br>*Spiering and Knight (2004) did find that large-diameter snags are important for cavity-nesting birds and occur at low densities in the Black Hills, but did not conclude that snag densities are insufficient to meet the needs of wildlife.*<br><br>*Lentile et al. (2000) indicate that snag density tends to correlate with overall stand density. This study was conducted in unmanaged stands. There is no indication that selective timber harvest "decimates" snag populations, particularly when snags are not cut unless they pose a hazard. The action alternatives would comply with Forest Plan direction for existing snags and large green tree retention.*<br><br>*The pygmy nuthatch is a SOLC species discussed on pages 3-94 through 3-95 of the Citadel DEIS. The Citadel project does not propose to remove any snags unless they present a safety hazard during operations.*<br><br>*Pygmy nuthatch nesting habitat includes trees 15-27 inches in diameter. Refer to the Citadel Wildlife Specialist Report and the Phase II Amendment FEIS (p. III-190). Phase II cites Ghalambor (2003) p. 13 (Black Hills pygmy nuthatch assessment) for this information.*<br><br>*The Citadel DEIS tiers to the Phase II Amendment FEIS, which determined that the pygmy nuthatch is likely to persist on the forest provided that Forest Plan objectives, standards and guidelines are met or followed. The Citadel DEIS adheres to all Forest plan* |

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| *(table omitted)*<br><br>Habitat conditions on the BHNF are insufficient to ensure the viability of snag-dependent wildlife. To begin with, the pygmy nuthatch has been found to depend on snags 19" or greater (Kingery and Ghalambor 2001). Thus, including snags 15" or even 16" in diameter in estimates of suitable habitat for these species is inappropriate as such snags are <u>not</u> suitable habitat. Furthermore, the pygmy nuthatch requires higher snag densities than 0.58 to 2.36 per acre (rather 3-4 per acre). *Id.*<br><br>Although the USFS may claim that large diameter snags (i.e., >15") exist in sufficient numbers in parts of the BHNF, this conclusion is difficult to fathom. On the one hand, if averages are so low, then obviously there more areas where there are no or very few large diameter snags than there are areas with sufficient numbers. The averages clearly show that, on balance, there cannot possibly be more areas that have sufficient numbers of large diameter snags than areas with few to no such snags. In addition, this conclusion ignores a key component of managing for diversity and viability, ensuring well-distributed habitat. If some areas of the BHNF have sufficient large diameter snags, while many areas do not, it is difficult to believe that this represents well-distributed habitat sufficient to ensure the viability of snag-dependent species of wildlife. In any event, the USFS has not pointed to any information or analysis showing where these areas of sufficient large diameter snags are located, how large these areas are, or whether they are actually utilized by snag-dependent wildlife. At best, the USFS is arm waving and at worst, is attempting to gloss over its embarrassing snag data.<br><br>Adding to the concern over the inadequacies of existing snag diameters is the fact that snag recruitment will invariably produce fewer and fewer large diameter snags as the BHNF continues to experience extensive logging and thinning. To address the shortages of large diameter trees, there need to be sufficient numbers of large diameter trees. Yet, the USFS has disclosed that, in total, live trees greater than 15" dbh <u>average only 9.4 per acre across the entire BHNF</u>. <u>Trees greater than 20" average only 1.3 per acre</u>. If every tree greater than 15" were to die tomorrow and become a snag, some of the problems may be solved; but this is not what happens in reality. In reality, mortality is a slow process. We have seen estimates in project-level EAs of less than one tree per acre per year. Thus, even by existing mortality rates, it is likely that sufficient numbers of large diameter snags will not come into existence for years to come. This | *standards and guidelines.* |

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| would only happen, however, if stands were unmanaged.<br><br>*(graph omitted)* | |
| Comment 21-31: As it is, the USFS intensively manages the BHNF and the Citadel timber sale will exacerbate snag habitat deficits. One goal of the Citadel timber sale is to reduce tree mortality, making it even less likely that sufficient large diameter snags will be produced within a reasonable timeframe, both in the project area and across the BHNF. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to ensure future creation of enough large diameter snags, logging ultimately removes many of these trees and, in combination with the associated mortality rate reductions, artificially keeps both the numbers of large diameter live trees and large diameter snags depressed (the snags more so). And, as already explained, the Citadel timber sale permits the removal of snags for safety hazards, while other snags may "inadvertently" be downed. Ultimately, the timber sale is a recipe for further reductions for decades to come, in already much-reduced large diameter snag densities. | *Refer to responses for Comments 21-50 through 21-54 21-28 and 21-29.*<br><br>*Snags are discussed in the Phase II Amendment FEIS in Appendix D, pages 34-37 and the 10/2005 Errata. Large diameter trees are discussed on pages III-10 and 11 of the Phase II FEIS.*<br><br>*Proposed activities are designed to reduce, but not eliminate, mountain pine beetle caused mortality in the project area. Snag creation will continue to occur. Reducing mountain pine beetle risk will improve the potential for trees to gain diameter growth and size prior to becoming snags.* |
| Comment 21-32: Snag densities on the BHNF are also extremely low and are already insufficient to meet the needs of wildlife (Spiering and Knight 2004). As Anderson (2003) states with regards to the black-backed woodpecker:<br><br>> Snag surveys on the Black Hills National Forest showed an average of 173 hard snags of ponderosa pine per 100 acres (40.5 ha) greater than 25.4 cm (10 inches) dbh (USDA Forest Service 1996). A separate study found an average of 3.6 snags greater than 25.4 cm (10 inches) dbh per 0.4 ha (1 acre) in stands not actively managed for 20 to 30 years on the Black Hills National Forest (Lentile and others 2000). These numbers mean that many stands have much lower than the number of snags recommended by many sources (Scott 1978; Scott and Oldemeyer 1983a; Raphael and White 1984; Zarnowitz 1985; Goggans 1989a; Bate 1995; see Table 17), so it is important to conserve as many snags as possible. (p. 23)<br><br>The existing conditions indicate that snag-dependent wildlife are again essentially living on deficit habitat, a situation that will only lead to declines and potentially | *See response to Comments 21-30 and 21-31.*<br><br>*Logging does not "invariably target large diameter trees". Thinning proposed under all alternatives would retain the largest, best-formed trees.* |

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| extirpations of snag dependent wildlife. Lentile et al. (2000) estimate that snags in the BHNF greater than 10" dbh average only 3.96 per acre.<br><br>*(graph omitted)*<br><br>Spiering and Knight (2004) estimate that snags greater than 15" in diameter average 0.7 per acre. Currently, this is insufficient to meet the documented needs of several snag-dependent species.<br><br>*(table omitted)*<br><br>Indeed, as can be seen by the above table, several species require snag densities to be grater than 4/acre, some much larger. Although snag diameter requirements for the Sharp-shinned and Cooper's hawks are not reported, it is assumed that, like other wildlife, these snags should be greater than 10" dbh. As explained, densities of snags greater than 10" dbh are reported to be less than 4 by Lentile et al. (2000). And, although snag densities are based on burned areas in some cases, we assume that estimates of snag densities in the BHNF include recently burned areas.<br><br>Of more concern, however, are the extremely low densities of large diameter snags, or those greater than 15" dbh. The Lewis's woodpecker and silver-haired bat in particular require high densities of large diameter snags. Currently, snags greater than 15" dbh average 0.7 per acre, while the silver-haired bat requires 8.5 snags per acre greater than 17.32 inches and the Lewis's woodpecker requires 24 snags per acre greater than 18.7 inches. While the USFS claims that recent fires have created "extensive" areas of snags, the agency has yet to show what the average diameter of these snags are. If snag diameters are similar to live tree diameters on the BHNF, then it is highly likely that densities of large diameter snags even in burned areas are extremely low and likely below the needs of the black-backed woodpecker, Lewis's woodpecker, and others. Although black-backed woodpeckers have been found in the Jasper burn area, it is interesting to note that populations have been declining significantly in the last two years (Panjabi 2004).<br><br>Adding to the concern over the inadequacies of existing densities of large diameter snags is the fact that snag recruitment will invariably produce fewer and fewer large diameter snags as the BHNF continues to experience extensive logging and thinning. To address the shortages of large diameter trees, there need to be sufficient numbers of large diameter trees. Yet, the Phase II Amendment FEIS discloses that, in total, live | |

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| trees greater than 15" dbh average only 9.4 per acre across the entire BHNF. Trees greater than 20" average only 1.3 per acre. Although if every tree greater than 15" were to die tomorrow and become a snag, some of the problems may be solved; this is not what happens in reality. In reality, mortality is a slow process.<br><br>As it is, the USFS intensively manages the BHNF and the Citadel timber sale will exacerbate snag habitat deficits. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to ensure future creation of enough large diameter snags, logging ultimately removes many of these trees and, in combination with the associated mortality rate reductions, artificially keeps both the numbers of large diameter live trees and large diameter snags depressed (the snags more so). Ultimately, the timber sale is a recipe for further reductions in already much-reduced large diameter snag densities for decades to come. | |
| Comment 21-33: Casting the efficacy of any snag retention standards into doubt, however, especially in relation to the retention of large diameter snags, is information that suggests snag persistence is seriously jeopardized when stands of trees are logged or thinned.<br><br>Indeed, although the USFS claims that snag persistence averages around 15 years, a review of data relied upon by the USFS suggests that this is not uniformly the case. Brian Brademeyer, a local resident of the Black Hills and a civil engineer who graduated from the Massachusetts Institute of Technology, found that, based on Lentile et al. (2002), logging and thinning significantly reduce snag longevity. Based on simple math, Brademeyer found that, based on the data in Lentile et al. (2000), snag persistence is negatively correlated with basal area. In other words, snag persistence decreases as basal area decreases. Brademeyer found, for instance, that an existing 100-year old snag could be expected to persist for less than one year (only 7 months) after thinning a stand down to 40 basal area, even without direct damage to the snag through logging. By way of comparison, a 250-year old tree dying in an old-growth stand of 150 basal area could be expected to provide snag habitat for an average of 49.8 years, many times as long as a 100-year old tree. Similarly, reducing an existing stand (say 100-year old trees) from 110 basal area to 40 basal area would literally decimate existing snag habitat, reducing the future lives of existing snags from 6 years down to 7 months. The statement of Brian Brademeyer was attached to our scoping comments on the Sherwood | *See responses to Comments 21-50 through 21-54.* |

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| timber sale.<br><br>Because the USFS assumes uniform snag persistence across the BHNF, the agency is relying on flawed assumptions with regards to the Citadel timber sale. Because the BHNF is so intensively managed, with most of the forest experiencing logging and thinning within the last 20 years, it can be expected that snag persistence has been significantly reduced. This would explain the extremely low snag densities. Furthermore, other factors that affect snag persistence include snag removal for safety reasons, illegal firewood cutting, and inadvertently knocking down snags during timber harvesting operations, making it likely that snag persistence is even lower. Data related to snag longevity in managed stands casts serious doubt as to whether snag retention measures are effective at providing adequate wildlife habitat. Instead of authorizing new road construction or road re-construction, for instance, the USFS should be decommissioning existing roads and ways to help protect snags on the BHNF. | |
| Comment 21-34: The proposed action (Alternative 2) states that it would reduce the potential for a large increase in brown, insect-killed or fire-killed trees evident in the landscape. DEIS at 190. We fail to understand why this would be a positive outcome when snags on the project area are already below the LRMP objectives. | *The Citadel DEIS does not include an Alternative 2 as alternatives are lettered. The page referenced in this comment does not exist in the Citadel DEIS.*<br><br>*Refer to response to Comment 21-29 in regards to snag availability.* |
| Comment 21-35: The DEIS discloses that all four of the 7th level watersheds are Class III—watersheds of high concern in which management activities must be done with great care. We would like to know to what extent water quality has been monitored within the Citadel timber sale area. We would also like to know more about stream health and the condition of wetlands on the project area. Very little useful information is included in the DEIS regarding streams and wetlands, making it difficult to provide substantive comments with regard to these resources. As we stated earlier, very little information has been included in the DEIS on water and soils. The analysis is quite inadequate and the conclusions unsupported. The DEIS must be supplemented. | *No water quality monitoring has been completed by the USFS within the Citadel area. Water quality monitoring is completed by the South Dakota Department of Environment and Natural Resources and this is usually in conjunction with sections 303(d) and 305(b) of the Clean Water Act. As stated in the Hydrology and Soils Report, "Currently, surface waters in the analysis area fully support designated beneficial uses." There does not appear to be a need for the state to do water quality monitoring.*<br><br>*Stream health is discussed in the Hydrology and Soils Report and was assessed and is presented in the Citadel DEIS on pp. 3-9 through 3-13.*<br><br>*Pertaining to wetlands, as stated in the Hydrology and Soils Report, "For all activities planned in both alternatives, the integrity of all wetlands (nationally delineated or not) in the area would be protected through BMPs and timber sale contract provisions." Timber sale contract provisions include a 100-foot non-treatment buffer around identified wetlands.* |
| Comment 21-36: Regardless, the BHNF is obligated | *The Citadel project will implement Forest Plan* |

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| under the Clean Water Act to fully comply with water quality standards. Nowhere in the Clean Water Act does it allow federal agencies latitude to violate water quality standards. Thus, we request the BHNF revisit its analysis of impacts to water quality and ensure that all applicable state water quality standards are complied with as a result of the Citadel timber sale. | *Management Requirement that include watershed conservation practices (WCP) and best management practices (BMP). Specific design criteria are listed in Appendix C of the Citadel DEIS. This will protect the water quality of the streams and creeks in the Citadel project area and the activities that are planned for will meet the requirements of the CWA. Implementation monitoring and subsequent effectiveness monitoring will ensure this. The Phase II Amendment FEIS discusses BMP effectiveness on pg. III-457.* |
| Comment 21-37: To this end, it is unclear the extent to which the USFS has conducted and/or will conduct baseline stream health surveys within the Citadel timber sale area. According to the USFS's Watershed Conservation Practices Handbook ("WCPH"), FSH 2509.25, and the BHNF Forest Plan, management actions must be undertaken so that "stream patterns, geometry, and habitats are maintained, or improved toward robust stream health." The WCPH at FSH 2509.25-05 defines stream health as, "The condition of a stream versus reference conditions for the stream type and geology, using metrics such as channel geometry, large woody debris, substrate, bank stability, flow regime, water chemistry, and aquatic biota." To assess stream health, the WCPH further states, "T-WALK (Ohlander 1996) is the minimum regional stream health screening tool; field methods used must be at least as rigorous." In the case of the Citadel timber sale, there is no indication that T-WALK or a method as rigorous has been used to assess stream health and ensure compliance with the WCPH and the BHNF Forest Plan. There is no indication that the proposed actions will maintain or improve stream patterns, geometry, and habitats toward robust stream health.[1] Before any decision to authorize the Citadel timber sale is made, stream health must be assessed in accordance with the WCPH and the BHNF Forest Plan. | *The Watershed Conservation Practice that is being cited is WCP #5. The design criteria for this practice include 1) "Add or remove rocks, wood, or other material in streams or lakes only if such action maintains or improves stream and lake health. Leave rocks and portions of wood that are embedded in beds or banks to prevent channel scour and maintain natural habitat complexity" and 2) "Do not relocate natural stream channels if avoidable. Return flow to natural channels where practicable. Where reconstruction of stream channels is necessary, construct channels and floodways with natural stream pattern and geometry, stable beds and banks and provide habitat complexity." This WCP is specifically designed to be applied when working in the streams or lakes. This project is not proposing to do anything in the streams or to relocate the streams so this WCP does not apply to the Citadel project.*<br><br>*Stream health was assessed and is presented in the Citadel DEIS on pp. 3-9 through 3-13. The WCPH has recently been updated and T-WALK is no longer the minimum stream health screening tool.* |
| Comment 21-38: The need to assess stream health in accordance with the WCPH and the BHNF Forest Plan is further required to ensure compliance with Section 404 of the Clean Water Act with regards to the proposed road construction/reconstruction and maintenance. According to Section 404, fill material from forest roads is only exempted from 404 permitting requirements if:<br><br>"such roads are constructed and maintained, in accordance with best management practices, to assure that flow and circulation patterns and chemical and biological characteristics of the navigable waters are not | *Flow, circulation, chemical, and biological characteristics will not be impacted or impaired when the one perennial stream is crossed. As outlined in the Hydrology and Soils Report, the following design criteria is being prescribed, "The crossing planned in both alternatives for upper Beaver Creek, in Section 29 to access stands in 070604, would go across the floodplain and cross the channel with a temporary bridge. Harvest operations should be completed within one year after fill material and bridge are installed. Within nine months after harvest operations are complete, the bridge and fills would be removed, and* |

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| impaired, that the reach of the navigable waters is not reduced, and that any adverse effect on the aquatic environment will be otherwise minimized[.]"<br><br>33 USC § 1344(f)(1)(E). This statute triggers USFS responsibility to ensure that several important requirements are met before undertaking road construction on National Forest System lands. To begin with, the statute clearly states that road construction and maintenance must be conducted in accordance with best management practices ("BMPs"). However, the statute is further clear that, if the USFS relies on BMPs, the agency must show that such measures assure that the flow, circulation, chemical, and biological characteristics of waters are not impaired. This is critical as recent BMP monitoring undertaken by the timber industry in the BHNF has failed to disclose whether BMPs are adequately protecting the flow, circulation, chemical, and biological characteristics of waters. In fact, the BMP audit undertaken by the Wyoming Timber Industry Associations fails to reference or identify any efforts to assess the flow, circulation, chemical, or biological characteristics of any monitored streams in relation to assessing BMP effectiveness. This raises serious questions over whether BMPs will ensure adequate protection of watersheds and preclude 404 permitting requirements.<br><br>However, regardless of the effectiveness of BMPs, Section 404 is clear that forest road construction and maintenance must not impair waters. To ensure compliance with this Section, the USFS must first assess stream health to determine whether or not streams within the Citadel timber sale are impaired. Again, this implicates the need to conduct stream health assessments using the T-WALK method or a more rigorous protocol. If the USFS does not undertake stream health assessments to determine whether or not streams are impaired within the timber sale area, then the agency has no basis to conclude Section 404 permitting is not required, regardless of whether BMPs are implemented.<br><br>Section 404 further requires that, regardless of BMP implementation, the reach of waters must not be reduced and that any adverse effects to the aquatic environment will be minimized. Thus, the USFS must fully analyze and assess the impacts of the proposed road construction/reconstruction and maintenance to determine the impacts to stream reaches and the aquatic environment. If the USFS's analysis shows that stream reach will be reduced and/or that the aquatic environment will be adversely affected, then the USFS must obtain a Section 404 permit for the proposed road | *disturbed sites adjacent to the stream should be revegetated to protect this perennial stream channel." Using the temporary bridge will minimize the impacts to the stream and stream channel, thereby not impacting flow, circulation, chemical and biological characteristics of the stream.*<br><br>*Stream health was assessed and is presented in the Citadel DEIS on pp. 3-9 through 3-13. The WCPH has recently been updated and T-WALK is no longer the minimum stream health screening tool.* |

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| construction and maintenance. | |
| Comment 21-39: We also question the effectiveness of BMPs. Although the BHNF claims that these measures are effective, we have seen no information or analysis showing that BMP application actually protects water quality in the context of water quality standards and/or adequately protects aquatic habitats. Furthermore, we have seen no information or analysis showing that BMPs protect soils and waters in light of high erosion risk, steep slopes, and in light of cumulative impacts already experienced by watersheds. There is no indication that BMPs have been shown to be effective on unstable soils or when building roads on grades greater than 12%. | *Refer to response to Comments 21-48, 21-65, and 21-36 on BMPs.* |
| Comment 21-40: The DEIS contains no discussion whatever of soil disturbance and cumulative soil disturbance and whether the level of soil disturbance would remain below 15% of any land unit within the Citadel timber sale area. The DEIS fails to provide any information or analysis showing this will be the case. The DEIS is therefore fatally flawed. We request the USFS disclose how much soil disturbance has occurred within the timber sale area already, to provide a context for supplementation of the DEIS's cumulative impacts assessment. | *Commenter is referring to Forest Plan Standard 1103. Existing conditions of the soils are discussed in the Citadel DEIS on pages 3-7 through 3-9, including a discussion of soil disturbance on pages 3-7 and 3-8. Direct and indirect effects of the alternatives relating to soil disturbance are discussed on pages 3-14 through 3-17, 3-20, and 3-21 of the DEIS. Cumulative effects are discussed on page 3-25. Alternatives B and C would meet this standard by using existing skid trails in those stands that have been treated previously to minimize additional soil disturbance. Utilization of BMPs would keep disturbance in previously untreated stands below 15 percent.*<br><br>*Past BMP monitoring shows that we are in compliance with Standard 1103.* |
| Comment 21-41: The DEIS also fails to analyze and assess the cumulative impacts of domestic livestock grazing, off-road vehicle use, and other activities that may cumulatively impact soils and waters within the Citadel timber sale area. In numerous places in the DEIS livestock and ORV damage to resources is disclosed, but there is no assessment of cumulative impacts. We request the USFS take a hard look at how livestock grazing and off-road vehicle use have affected and will affect soils and waters within the timber sale area. | *Section 3.2 (pages 3-1 through 3-5 of the Citadel DEIS) presents the past, present and reasonably foreseeable future activities that were considered for cumulative effects. Livestock grazing and ATV use are both included in this list. A detailed cumulative effects discussion appears in the Hydrology and Soils section of the EIS on pages 3-24 through 3-27. This discussion accounts for these activities in the Citadel project area. The project would meet Forest Plan requirements.* |
| Comment 21-42: The BHNF may also need to apply for a stormwater discharge permit for the proposed road construction. A storm water discharge permit is required under the Clean Water Act for any construction project that may disturb more than one acre and that leads to the unnatural runoff of pollutions, such as sediment, into waters of the United States. | *Silviculture and rangeland activities, including road construction and maintenance, are exempt from storm water permits.* |

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| Comment 21-43: The DEIS has conducted no analysis or assessment of project impacts on the soundscape of the project area and surrounding areas. Timber harvesting and other components of the proposed project involve the use of mechanical equipment which not only emits pollutants into the air, but also pollutes the soundscape of the project area and surrounding areas. Noise pollution is an issue not only for humans, but also for wildlife.<br><br>According to Kurt Fristrup, Acoustician with the National Park Service's Natural Sounds Program Center in Fort Collins, Colorado, hearing is essential for wildlife's sense of warning. Sounds not only scare animals away from an area, but also limit their ability to hear the natural sounds upon which depend for survival. The period from about 1 hour before sunrise to 2 hours after sunrise is especially important for bird communication and other ecological processes. Similarly, the period from 1 hour before sunset to a couple of hours after sunset is critical for other species.<br><br>Although a slight increase in decibel level might not seem significant, it is. For instance, a 6 dBA increase in ambient sound level due to noise will halve the distance at which many sounds can be heard, and cut the listening area to 25% of its original value. A 20 dBA increase in ambient sound level reduces hearing distance to 10% of its original value, and listening area to 1% of its original value. The ambient (background) noise level is different for every place. In backcountry areas of National Parks, for example, the ambient noise level is 15-25 dBA. The decibel level for a chainsaw is 97-110 dBA, while the level for a logging truck is 85-96 dBA, and a backhoe or bulldozer is 80 dBA. The impacts from these machines are cumulative.<br><br>Indirect evidence suggests that habitat loss is a potential impact of noise disturbance. For example, the distances of woodland caribou from such disturbances as roads, seismic lines and well sites were so large that 22 to 48% of their preferred habitats were avoided in their northern Alberta study area. Dyer et al. (2001). Archibald et al. (1987) estimated that 23% of a female grizzly bear's annual home range was avoided for 14 hours a day because of disturbance from logging truck traffic. Similarly, McLellan and Shackleton (1988) found that road avoidance represented a loss of 8.7% of the available habitat in their entire study area.<br><br>According to a study on the effects of noise on wildlife at an oil and gas drilling site in Alberta, Canada, "[T]he impacts of these effects might include habitat loss through avoidance, reduced reproductive success and | *The "soundscape" was not specifically analyzed. This item was not brought forth in any scoping input or other internal or external discussions or correspondence.*<br><br>*The wildlife biologist from the Citadel interdisciplinary team (IDT) did review the references cited in the comment (Dyer, Archibald, McLelland & Shackleton and AMEC). The species highlighted in three of the references (two on grizzly bears, one on woodland caribou) do not occur in the Black Hills. The fourth reference (AMEC) did discuss marten, beaver, amphibians (but not leopard frogs) and raptors. Table 6-2 on page 6-7 of the AMEC documents states, "No behavioural [sic] response was detected" for northern goshawk when the source of the noise was logging trucks. Effects of noise on marten, beaver and amphibians was either unavailable or inconclusive according to the AMEC report.* |

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| mortality." AMEC (2005).<br><br>Clearly, noise from a project, and particularly a project with chainsaws, skidding equipment, logging trucks, etc., has impacts on wildlife. We request that the USFS conduct full NEPA analysis and assessment on these impacts before a final EIS is issued and a decision made. We reiterate the need of the USFS to be serious about focusing on wildlife habitat needs, rather than just paying lip service to it. | |
| Comment 21-44: The forestwide cumulative impacts of the proposed forest plan amendments are not fully analyzed and assessed. The analysis and assessment of cumulative impacts is quite poor. The USFS cannot reasonably assess whether the proposed amendments are significant or not unless they are analyzed in the context of forestwide impacts. Such an analysis must consider any and all other recent forest plan amendments that have been piecemealed and analyzed only at the project level. | *The Citadel DEIS does not propose any Forest Plan amendments.* |
| Comment 21-45: While the LRMP has a Monitoring Implementation Guide for monitoring projects and resources on the forest, we question the ability of the USFS to provide adequate funding to carry out monitoring. Appendix C of the DEIS states that with respect to monitoring for soil compaction, the "Forest currently plans to continue that level of monitoring, ***as funds are available.*** This project may not be specifically monitored as sites are selected across the forest and only a few projects are monitored." These statements cause us great concern, especially if they apply to monitoring of the project as a whole. Monitoring is a critical component of the proposed project and unless the USFS can assure that all monitoring prescribed will occur, the project should not be authorized. | *The quoted phrase in this comment does not appear in the Citadel DEIS. In any case, monitoring is dependent upon funding. Funding and Forest-level monitoring is outside the scope of this analysis.* |
| Comment 21-46: 40 CFR §1508.20, 1997 requires the Forest Service to identify and disclose both the feasibility and the effectiveness of mitigation measures proposed. This includes, for instance, any proposed measures to mitigate impacts to goshawk, riparian areas, and erosion, and to other natural resource values. An assessment of the feasibility and effectiveness of mitigation measures should be included in the analysis, but it isn't. In particular, mitigation should include measures in the areas of wildlife, timber, recreation, water quality, soils, and the aquatic environment. There is almost no discussion of mitigation in the DEIS and what few references there are to mitigation are lacking in details. Does the BHNF believe that a project of this | *The Citadel project was designed to avoid impacts to resources that would require mitigation measures. An extensive list of design criteria is included in Appendix C; the application of these design criteria will negate the need for mitigation.*<br><br>*Refer to Chapter 3 of the Citadel DEIS for information on project effects by resource area.* |

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| scope and intensity will have no significant impacts? This is not made clear in the DEIS, but if this is the conclusion of the BHNF's NEPA analysis, we have seen no data or scientific support for this conclusion in the DEIS. | |
| Comment 21-47: Moreover, should the Forest Service choose to rely on Design Criteria that "meet or exceed" Best Management Practices (BMPs), the agency may not rely merely on prior experience and professional expertise without providing substantial data used to draw conclusions on the mitigation measures' effectiveness. Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1150 (9th Cir. 1998). | *See response to Comments 21-65, 21-38, 21-39, and 21-46.* |
| Comment 21-48: The Phase II Amendment is flawed and illegal and therefore the USFS cannot move forward with the Citadel timber sale. Our concerns over the Phase II Amendment as they relate to the Citadel timber sale are as follows.<br><br>As will be discussed in more detail in these comments, the proposed Phase II Amendment (and all action alternatives for that matter) does not live up to the USFS's promises as set forth in the Settlement Agreement in Civil Action No. 99-N-2173. In particular, the Phase II Amendment and all its proposed alternatives violate the Settlement Agreement by failing to address and fix the following flaws in the 1997 Revised BHNF LRMP as identified in the Chief's 1999 Appeal Decision:<br><br>1. Failing to ensure sufficient large diameter snags for snag-dependent species such as the northern flicker, black-backed woodpecker, three-toed woodpecker, Lewis' woodpecker, common flicker, and pygmy nuthatch are provided across the BHNF.<br>2. Failing to ensure sufficient snag densities for snag-dependent species such as the black-backed woodpecker and common flicker are provided across the BHNF.<br>3. Is not based on sufficient population trend data for snag dependent species to provide a context for the impacts of forest management to snag densities taking into consideration the "current age and structure of the forest" and any other natural or human-caused impacts to snag densities.<br>4. Fails to establish a sufficient snag density standard that meets the documented needs of snag-dependent species of wildlife on the BHNF in order to ensure snag dependent | *The Phase II Amendment addresses all aspects of the 2000 Settlement Agreement. See Phase II FEIS Chapter 1, Section 1-1.3. The Phase II decision addresses all of the Chief's concerns documented in the Consolidated Appeal decision of October 12, 1999. See Phase II FEIS Chapter 1, Section 1-1.2.*<br><br>*The Phase II decision addresses all points stipulated in the settlement agreement of September 2000 (Civil Action No. 99-N-2173, Biodiversity Associates v. Laverty). In this document the Forest Service agreed to consider research areas, management indicator species and goshawks in the Phase II analysis. Please refer to Chapter 1 of the Phase II FEIS for more information; Chapter III, pages III-7 through III-13 describes effects on snags. The northern flicker/common flicker is not discussed in the Phase II EIS because it was not selected as an emphasis species. Snag densities in relation to black-backed woodpeckers are discussed in Phase II FEIS Section 3-3.3.7.1 and in Appendix C. Effects on black-backed woodpecker are described in the Phase II FEIS on pp. III-238 through III-247, and Appendix C pp. 196-205; effects on three-toed woodpecker are described in Appendix C pp. 190-195; effects on Lewis' woodpecker are described in Appendix C pp. 220-225; effects on pygmy nuthatch are described on pp. III-190 through III-194 of the FEIS.*<br><br>*Available population data for snag dependent species is presented in Phase II FEIS Chapter 3, section 3-3.3 and in Appendix C. The current age and structure distribution of the forest, including snag densities, are discussed in Phase II FEIS Chapter 3, section 3-2.1.*<br><br>*The effects of the snag density objectives, standards and guidelines for each alternative are discussed for snag dependent species in Section 3-3.3 in the Phase II FEIS and in Appendix C.* |

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| species viability on the BHNF.<br>5. Fails to allow natural fires to occur at some level on the BHNF in order to benefit the Lewis' woodpecker and in fact prescribes measures to supposedly reduce their occurrence.<br>6. Does not provide standards and guidelines, supported with the necessary analysis and information that maintain the viability of the Lewis' woodpecker.<br>7. Fails to provide the necessary information and analysis that supports any measure designed to protect the northern goshawk and its habitat.<br>8. Fails to provide specific measures to protect the goshawk and its habitat on the southern third of the forest while providing overall measures that protect the goshawk and its habitat on the entire BHNF.<br>9. Fails to provide standards and guidelines that maintain goshawk viability in accordance with the NFMA, its implementing regulations, and FSM direction.<br>10. Fails to analysis and information that supports the effectiveness of best management practices ("BMP's") in protecting native fish species.<br>11. Fails to provide analysis and information that supports determinations that the impacts of management to native fisheries are not significant, fails to adequately analyze the impacts of non-native fish species to native fish species, and fails provide scientifically supported measures that protect native fisheries and ensure native fish species viability.<br>12. Fails to ensure viable populations of existing fish species are maintained on the BHNF.<br>13. Fails to provide monitoring objectives specific to the northern leopard frog.<br>14. Outright ignores, and at worst attempts to discount, the findings of the 1993 and 2002 Frest and Johannes reports and fails to ensure the viability of snail species of concern.<br>15. Fails to develop and implement a species-specific monitoring plan with quantified goals and objectives for management indicator species ("MIS") and sensitive species and their habitat.<br>16. Fails to develop adequate quantitative MIS population goals and ensure project-level activities do not jeopardize these goals.<br>17. Fails to select and monitor MIS in accordance with NFMA regulations and FSM direction.<br>18. Fails to develop a sensitive plant monitoring plan that provides quantitative, consistent, unbiased, and defensible data in order to | *The analysis for Lewis' woodpecker is included in Phase II FEIS Appendix C. The analysis includes a discussion on the expected effects of meeting structural stage objectives (Objectives 4.1-203, 5.1-204, 5.4-206, 5.43-204, and 5.6-204), snag objectives (211), post fire salvage objectives (11-03), and snag standards and guidelines (2301).*<br><br>*Analysis of effects of each alternative on northern goshawks is discussed in Phase II FEIS Appendix C, Section 4-6.10.*<br><br>*The biological evaluation for the Phase II Amendment projected that goshawks are likely to persist under implementation of Alternative 6 due to nest area management direction, late successional areas, sufficient snags and downed logs, and structural stage objectives (FEIS Appendix C, p. 243). Specific management direction relating to the northern goshawk includes Standards 3108 and 3111, as well as direction concerning snags, downed logs and structural stages (Phase II FEIS, Appendix D). NFMA directs that the Plan will be developed for the planning area, which is the National Forest. The amendment does not provide objectives, standards and guidelines for goshawks specifically for management areas in the southern third of the Forest. These areas are covered by the Forest-wide goshawk standards and guidelines.*<br><br>*NFMA and FSM direction do not prescribe standards and guidelines for goshawks. Standards and guidelines were developed for each alternative consistent with requirements of NFMA and FSM direction. Goshawk-specific standards and guidelines are shown in Phase II FEIS Appendix D (Standards/guidelines 3108-3114).*<br><br>*Best management practices were addressed throughout Chapter 3 of the Phase II Amendment EIS. Page 3-59 specifically discusses BMP effectiveness related to water resources. Pate 18 of the 2002 Forest Plan monitoring report discusses compliance with and the effectiveness of best management practices.*<br><br>*The significance of impacts to native fish are disclosed in the Aquatic Ecosystem section and individual fish species discussions in the Phase II EIS and Appendix C (BA/BE). The Phase II EIS analyzes the effects of implementing Forest Plan standards and guidelines, watershed conservation practices and Best Management Practices that are based upon research and current practices that conserve or enhance aquatic habitat to ensure native fish species viability. The effects of non-native fish on native fish are disclosed in Appendix C,* |

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| determine what effects management activities are having on populations of sensitive plants.<br>19. Fails to ensure livestock grazing does not conflict with the values for which Botanical Areas are designated, fails to provide monitoring requirements that quantify the impacts to sensitive plant species in order to ensure livestock grazing does not conflict with the values for which Botanical Areas may be designated.<br>20. Fails to provide sufficient and specific standards and guidelines that assure the protection and viability of sensitive plant species.<br>21. Fails to provide specific direction relating to maintaining viable populations of species.<br>22. Is not based on viability determinations supported by species-specific discussions of critical habitat features, actual populations, and habitat distributions in order to meet the requirements of the NFMA and its implementing regulations.<br>23. Fails to provide habitat capable of supporting well-distributed populations of native vertebrate species across the planning area.<br>24. Fails to present a fragmentation analysis for those species where fragmentation effects are suspected or known to affect the species.<br>25. Fails to ensure compliance with the NFMA and its implementing regulations with regards to the diversity of plant and animal communities and species viability.<br><br>In addition, the Phase II Amendment fails to comply with key paragraphs of the Settlement Agreement. In particular, the Amendment:<br><br>1. Fails to ensure the viability of the northern goshawk, as required by § (2)(a) of the Settlement Agreement.<br>2. Fails to provide for monitoring of MIS in accordance with the NFMA implementing regulations.<br>3. Fails to appropriately evaluate and ensure the viability of MIS.<br>4. Fails to appropriately analyze candidate Research Natural Areas ("RNAs")<br><br>And finally, the Phase II Amendment violates the Settlement Agreement because it fails to comply with the requirements of the NFMA, NFMA implementing regulations, and USFS policy regarding the maintenance of viable populations of wildlife, fish, and plants on the BHNF. Among other things, the Phase | *pages 172, 176 and 181 of the FEIS.*<br><br>*Leopard frogs, as a sensitive species, will be monitored according to Chapter 4 of the Forest Plan as amended. See Phase II FEIS Appendix D for a list of monitoring items.*<br><br>*The 1993 and 2000 Frest and Johannes reports were used and referenced in the analysis. The report serves as a valid survey of snail occurrence and distribution. The Phase II EIS discloses uncertainty associated with the suggested taxonomic changes to Cooper's mountainsnail because the suggested taxonomic changes have not been peer reviewed and accepted through the scientific community. Based on other comment received on the Phase II DEIS, direction for management of snail colonies has been revised in Alternative 6 and the persistence of snails on the Forest was analyzed in Chapter 3, Section 3-3, and in Appendix C.*<br><br>*Chapter 4 of the amended Forest Plan addresses monitoring. Species-specific protocols are included in the Forest Plan M onitoring Implementation Guide.*<br><br>*MIS objectives were developed based on the agency's most current interpretation of law, regulation and policy regarding MIS requirements. The Forest Plan provides direction regarding MIS trend in the form of Objectives, Standards and Guidelines for the Planning Area (National Forest). Projects are analyzed for their consistency with the Forest Plan to evaluate if MIS direction is being met.*<br><br>*The selection of MIS followed the Regionally approved process identified in Hayward et al. 2001. Monitoring of MIS will be based on protocols designed to collect the data needed to evaluate the attainment of MIS-specific objectives.*<br><br>*Grazing conflicts are site-specific and area addressed at the allotment planning level, following Forest Plan objectives, standards, and guidelines addressing botanical areas and livestock grazing. An example is Standard 3.1-2503, which restricts livestock access to designated botanical areas in order to protect occurrences of sensitive species or species of local concern. Concerning monitoring, see Forest Plan Chapter 4, especially the Vegetative Diversity monitoring items.*<br><br>*Maintaining viable populations of native and desired non-native plants and animals is required through the National Forest Management Act (Section 6(g)(3) and USDA Departmental Regulation 9500-4). It is not* |

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| II Amendment does not provide sufficient habitat to maintain viable populations of certain species, fails to appropriately assess species viability based on the NFMA regulations, fails to ensure viable populations exist in the first place, inappropriately rejects potential MIS, fails to provide for the monitoring of populations of MIS, and fails to provide for a diversity of plant and animals. | *necessary to repeat this requirement as a standard in the Forest Plan.*<br><br>*The Phase II Amendment includes goals, objectives, standards and guidelines to conserve plant and wildlife species and their habitat in a multiple-use context. This direction is consistent with direction in the planning regulations on maintaining viable populations of species.*<br><br>*Habitat requirements of each species are discussed in the Phase II FEIS "Affected Environment" section under each species. Effects to theses habitat features are evaluated relative to each alternative immediately following the habitat descriptions.*<br><br>*The Phase II Amendment includes goals, objectives, standards and guidelines to conserve plant and wildlife species and their habitat in a multiple-use context.*<br><br>*Fragmentation relevance and effects vary by species and their habitat needs and mobility. Abundance and distribution of habitat for individual wildlife species for which fragmentation is a concern is discussed in Phase II FEIS Chapter 3, Section 3-3.*<br><br>*The determination of effects of the Phase II Amendment for all threatened, endangered and sensitive species, and also species of local concern, are disclosed in the Phase II FEIS Chapter 3 Section 3-3 and in Appendix C.*<br><br>*The Phase II Amendment analysis concluded that goshawk viability will be maintained (Phase II Record of Decision p. 7).*<br><br>*Monitoring of MIS is disclosed in the Monitoring Approach section of individual MIS discussions on pages 3-224 to 3-299 of the Phase II EIS. Monitoring strategy is shown in Chapter 4 of the amended Forest Plan. Specific protocols are located in the Forest Plan Monitoring Implementation Guide.*<br><br>*The viability of MIS that are also sensitive species is disclosed in the Phase II Biological Evaluation (FEIS Appendix C). The viability of MIS that are not sensitive species is disclosed in the Phase II FEIS.*<br><br>*During the Phase II Amendment process, a total of 121 areas were evaluated for their potential as candidate RNAs. Of these 121, nine candidate areas were identified. Please refer to the Phase II FEIS, Section 3-6.2. The detailed analysis process can be reviewed in the "Final Screening and Rationale for Areas Considered for Evaluation as Research Natural Areas",* |

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| | *available on the Black Hills NF web site (www.fs.fed.us/r2/blackhills/) .*<br><br>*Violates Settlement Agreement – see initial response to Comment 21-47. All alternatives considered in the Phase II FEIS include goals, objectives, standards and guidelines to conserve native and desirable non-native plant and wildlife species and their habitat in a multiple-use context. This direction is consistent with the law.* |
| Comment 21-49: The ability of the Phase II Amendment to ensure viable, well distributed populations of native wildlife, fish, and plants is mostly predicated upon the USFS meeting goals, objectives, or guidelines. For instance, to ensure the long-term persistence of old-growth dependent species, the USFS relies upon meeting structural stage "objectives" in each of the various management areas. Yet the reliance upon goals, objectives, and guidelines to ensure adequate species and habitat protection is entirely inappropriate as they provide no measurable protection.<br><br>A guideline is discretionary and unenforceable. As the USFS states in the 1997 Revised BHNF LRMP:<br><br>> A forest guideline is defined as a preferred or advisable course of action. Deviation from a guideline is permissible if the responsible official documents the reasons for a deviation. (p. II-1)<br><br>In the Chief's appeal decision, the BHNF was specifically criticized for relying on guidelines to ensure the viability of the northern goshawk. Goals too are discretionary and carry even less weight as required management actions. As the 1997 Revised BHNF LRMP states:<br><br>> Goals describe a desired end result and are normally expressed in broad general terms. Forest plan goals link broad agency goals as set forth in law, executive order, regulation, agency directives, and the Resource Planning Assessment program. These goals also closely reflect the Regional goals described in the Rocky Mountain Regional Guide, 1992.<br><br>> The Forest Plan does not specify a time period for achievement of goals. Additionally, Forest Plan goals are generally not expressed in quantitative terms; rather, assessment of whether goals are being achieved occurs through monitoring of associated measurable | *Each feature of the Phase II Amendment contributes to species habitat management. The Forest relies on achieving goals and objectives while following standards and guidelines to provide species habitat. It is inappropriate to use standards alone because there would be no reference for desired conditions. Objectives provide the framework for the ecosystem approach to managing the Forest and providing species habitat. Some species have specific requirements for conservation. For these species, standards are appropriate to ensure species-specific habitat features are maintained. Examples of species-specific standards include 3108 (goshawks), 3103 (snails), and 3120 (burrowing owls).* |

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| objectives. (p. I-1)<br><br>Objectives too are discretionary. The 1997 Revised BHNF LRMP states:<br><br>> Objectives describe measurable desired results intended to promote achievement of Forest Plan goals. Objectives describe (1) desired resource conditions in the area covered by the Plan, either in the next decade or longer and (2) desired levels of goods and services that the Plan area is capable of producing in the next decade. Objectives describing desired levels of good and services are only described on a Forestwide basis, while those describing desired resource conditions are either Forestwide or applicable to a portion of the Forest or a specific management area.<br><br>> The Forest Supervisor shall strive to plan and implement projects which contribute to achieving Forest Plan objectives in a manner consistent with Forest Plan standards and applicable legal requirements. Many variables affect achievement of objectives which cannot be fully assessed when a plan is revised or amended. However, a forest plan need not be amended if forest plan objectives are not achieved.<br><br>In other words, the USFS should "strive" to "contribute" to objectives, but is not required to actually meet them.<br><br>Furthermore, as the USFS has explained, compliance with an LRMP is based <u>only</u> on whether Standards are met. The 1997 Revised BHNF LRMP states:<br><br>> The determination of whether or not an individual project is consistent with the Forest Plan shall be based on whether or not the project adheres to Forestwide and Management Area <u>Standards</u>.<br><br>> Plan objectives, Forestwide and management area guidelines, project-specific outputs, and activity schedules should not be used in the [Forest Plan] consistency determination.<br><br>> Resource plans and permits, contracts, and other instruments issued for the use and occupancy of National Forest System lands must be consistent with the Forest Plan unless specifically exempted from applicability in an amendment or revision decision document. | |

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| Determinations of consistency of permits, contracts, and other instruments for occupancy and use of National Forest System lands are based on whether or not they adhere to Forestwide and Management Area Standards. (Preface-5, emphasis added)<br><br>Thus, for LRMP direction to mean anything on the ground, to mean anything in terms of actual, measurable results that actually maintain species diversity and viability, the USFS must rely primarily, if not entirely, upon the effectiveness of Standards. Unfortunately, the Phase II Amendment does not do this.<br><br>Instead, the USFS relies heavily, if not entirely, on meeting guidelines, goals, and objectives, none of which actually require any on the ground results. While the USFS may "promise" to meet them, ultimately this promise is universally empty. Goals, objectives, and guidelines carry with them infinite discretion. As the NFMA, NFMA implementing regulations, and USFS policy require substantive results in terms of meeting diversity and viability requirements, so too do these laws, regulations, and policies require more than an empty promise to ensure adequate protection of wildlife, fish, and plants. So long as the USFS attempts to rely on goal, objectives, and guidelines to ensure diversity and viability, the agency will be failing to meet its basic legal and biological obligations. | |
| Comment 21-50: **Snags and Snag Dependent Species**<br><br>The USFS clearly recognizes that many species of wildlife depend on snags for their survival and persistence and we greatly appreciate all the efforts that the USFS has undertaken to better understand the needs of snag-dependent wildlife in the BHNF. However, as will be discussed, proposed snag management direction does not seem to reflect the needs of wildlife as disclosed in information available to and even prepared by the USFS, a disturbing revelation. As the Chief stated in his appeal decision:<br><br>After reviewing the record, I find that the Revised Plan does comply with the intent and requirements of the implementing regulations with respect to gathering information. However, I find that the Revised Plan did not make use of this information to establish a sufficient standard for snag density. (p. 45).<br><br>The USFS seems to not be heeding the Chief's ruling and making the same mistake again through the Phase II | *The effects of Phase II Amendment snag density objectives, standards, and guidelines are discussed for snag-dependent species in Phase II FEIS Section 3-3.3 and in Appendix C. Phase II Amendment alternatives 2 and 4 included snag direction from the 1999 Appeal Decision. Alternatives 3 and 6 were similar to the 1999 appeal decision because they used an average of 3 snags per acre. The Chief's ruling of 2 snags per acre on south and west facing slopes and 4 snags per acre on north and east facing slopes would likely result in an average of about 3 snags per acre* |

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| Comment 21-51: **The Inadequacy of Existing Snag Conservation Measures**<br><br>Already, existing snag and green retention standards under the Phase I Amendment have been found to be inadequate for certain species of wildlife in the BHNF. In a Conservation Assessment for the silver-haired bat (*Lasionycteris noctivagans*), Schmidt (2003b) states:<br><br>> The 2001 Phase I Amendment to the LRMP increased minimum hard snag requirements to 2 snags/acre for Ponderosa Pine forest on south and west slopes, and 4 snags/acre on north and east slopes (US Forest Service 2001). Recommended average snag densities of 2-4 hard snags per acre (Phase I Amendment LRMP) were far below the minimal snag density of 21 snags/ha reported by Mattson et al. (1996) for this species in the Black Hills National Forest. (p. 9) | *Natural snag spacing is not even. Snag densities in the Phase II Amendment FEIS alternatives were reasonable, given that some areas will have higher numbers of snags while some areas have none. Other objectives such as 11-03 were designed to provide some areas of high snag density. Other standards such as 2301 were designed to provide larger snags to the extent possible. The effects of snag direction for each alternative are discussed for snag-dependent species in Phase II Amendment FEIS Section 3-3.3 and in Appendix C.* |
| This statement refers only to snag density standards, which are but one component of snag habitat. Snag retention standards are also inadequate based on the needs of wildlife. For instance, the silver-haired bat in the Black Hills utilizes snags 44 cm in diameter (17.32 inches dbh) for maternity roosts (Mattson et al. 1996). Yet, snag retention standards under Phase I require minimum snag diameters to be only 10" dbh, and requires that only 25% be greater than 20" dbh. On its face, the standard is inadequate because it allows snags to be retained that are of insufficient diameter for the silver-haired bat. However, by requiring only a certain proportion to be larger diameter, the USFS is essentially ensuring no snag habitat is available for the silver-haired bat. This similarly provides insufficient habitat for several other species, as will be discussed below. | *See Phase II FEIS, pg. III-13 – snag recruitment will be provided by structural stage diversity.* |
| Thus, for the USFS to ensure legally and biologically adequate snag management, the Phase II Amendment must provide for more large diameter snags across the landscape. Unfortunately, the USFS does not seem to have done so in any of the proposed action alternatives. While this situation in and of itself renders the proposed snag retention measures under all action alternatives wholly inadequate, there is further indication that the proposed snag management measures are not only entirely inadequate, but will ultimately fail to ensure sufficient habitat is provided to ensure the viability of snag-dependent wildlife. | *See Phase II FEIS, pg. III-190 through III-194 regarding the pygmy nuthatch – sufficient large trees will be well-distributed across the Forest.* |

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| Comment 21-52: **Snag Diameters**<br><br>Snag diameters on the BHNF are extremely low and are already insufficient to meet the needs of wildlife (Spiering and Knight 2004). The existing conditions indicate that snag-dependent wildlife are essentially living on deficit habitat, a situation that will only lead to declines and potentially extirpations of snag dependent wildlife. Spiering and Knight (2004) estimate that of the snags in the BHNF, snags greater than 20" dbh average only 0.2 per acre. This isn't even a whole tree. Adding to that, snags between 15 and 19" dbh average only 0.5 per acre. Together, snags greater than 15" dbh average 0.7 per acre across the BHNF.<br><br>*(graph omitted)* | *See response to Comment 21-50 and Phase II FEIS p. III-8 regarding snags – Spiering and Knight study cited and summarized.* |
| Several species of wildlife are reported to depend on larger diameter snags, most with diameters of around 20" or greater, but at least greater than 15" dbh. Indeed, Spiering and Knight (2004) report that wildlife use of snags increased as diameter increased. The USFS also discloses this forthrightly in the FEIS and associated biological evaluation. In addition, all species of wildlife that require large diameter snags invariably require more than one per acre. The welfare of the pygmy nuthatch is of particular concern given its extremely low numbers in the BHNF (Panjabi 2001, 2003, 2004). Elsewhere, the species is common in ponderosa pine forest<br><br>(Ghalambor 2003). This strongly indicates that past and present management has led to significant declines in habitat for the species, a conclusions supported by scientific studies on the nuthatch. Indeed, the pygmy nuthatch was one of four species that showed a significant reduction in population density with a reduction in snags (Scott 1979).<br><br>*(table omitted)* | *See Phase II FEIS, pp. III-190 through III-194 – Effects to pygmy nuthatch are analyzed and described.* |
| Even under the USFS's liberal and unsupported estimate that snags greater than 15" dbh average 1.63 per acre (see, FEIS Table 3-5), habitat conditions on the BHNF are insufficient to ensure the viability of snag-dependent wildlife. To begin with, the pygmy nuthatch, Lewis's woodpecker, silver-haired bat, fringed myotis, American kestrel and other species have been found to depend on snags 17" or greater (see table above). Thus, including snags 15" or even 16" in diameter in estimates of suitable habitat for these species is inappropriate as such snags are not suitable habitat. Furthermore, and as will explained further in these comments, the silver-haired bat, Lewis's woodpecker, and other species require | *See response to Comment 21-51 and Phase II FEIS pp. III-7 through III-13 – snags estimated by diameter range.* |

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| higher snag densities than 1.63 per acre.<br><br>Although the USFS may claim that large diameter snags (i.e., >15") exist in sufficient numbers in parts of the BHNF, this conclusion is difficult to stomach. On the one hand, if averages are so low, then obviously there more areas where there are no or very few large diameter snags than there are areas with sufficient numbers. The averages clearly show that, on balance, there cannot possibly be more areas that have sufficient numbers of large diameter snags than areas with few to no such snags. In addition, this conclusion ignores a key component of managing for diversity and viability, ensuring well-distributed habitat. If some areas of the BHNF have sufficient large diameter snags, while may areas do not, it is difficult to believe that this represents well-distributed habitat sufficient to ensure the viability of snag-dependent species of wildlife. In any event, the USFS has not pointed to any information or analysis showing where these areas of sufficient large diameter snags are located, how large these areas are, or whether they are actually utilized by snag-dependent wildlife. At best, the USFS is arm waving and at worst, is attempting to gloss over its embarrassing snag data. | *See Phase II FEIS, pp. III-190 through III-194 – pygmy nuthatch habitat will be well-distributed across the Forest under Alternative 6.* |
| Adding to the concern over the inadequacies of existing snag diameters is the fact that snag recruitment will invariably produce fewer and fewer large diameter snags as the BHNF continues to experience extensive logging and thinning. To address the shortages of large diameter trees, there needs to be sufficient numbers of large diameter trees. Yet, the FEIS discloses that, in total, live trees greater than 15" dbh <u>average only 9.4 per acre across the entire BHNF</u>. <u>Trees greater than 20" average only 1.3 per acre</u>. Although if every tree greater than 15" were to die tomorrow and become snags, some of the problems may be solved, this is not what happens in reality. In reality, mortality is a slow process. While the FEIS presents no estimate of mortality rates, we have seen estimates in project-level EAs of less than one tree per acre per year. Thus, even by existing mortality rates, it is likely that sufficient numbers of large diameter snags will not come into existence for years to come. However, this would only happen if stands were unmanaged.<br><br>*(graph omitted)*<br><br>As it is, the USFS intensively manages the BHNF and is proposing to increase logging and thinning under the Phase II Amendment. The goal, as the USFS has stated on numerous occasions, is to reduce tree mortality. Logically, this would mean that forest management would reduce mortality rates, making it even less likely | *Standing dead trees are not designated to be cut. Several snag studies have been conducted in the Black Hills. See Phase II FEIS, forested ecosystems chapter. See also response to Comment 21-50.*<br><br>*The Phase II FEIS forested ecosystems chapter references two snag studies conducted on the Forest. Snag persistence is discussed in this research specific to the Black Hills.* |

| Comment | Response |
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| that sufficient large diameter snags will be produced within a reasonable timeframe. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to ensure future creation of enough large diameter snags, logging ultimately removes many of these trees and, in combination with the associated mortality rate reductions, artificially keeps both the numbers of large diameter live trees and large diameter snags depressed (the snags more so). Ultimately, the Phase II Amendment is a recipe for further reductions in already much-reduced large diameter snag densities for decades to come. | |
| <u>Comment 21-53</u>: **Snag Densities**<br><br>Snag densities on the BHNF are also extremely low and are already insufficient to meet the needs of wildlife (Spiering and Knight 2004). As Anderson (2003) states with regards to the black-backed woodpecker:<br><br>> Snag surveys on the Black Hills National Forest showed an average of 173 hard snags of ponderosa pine per 100 acres (40.5 ha) greater than 25.4 cm (10 inches) dbh (USDA Forest Service 1996). A separate study found an average of 3.6 snags greater than 25.4 cm (10 inches) dbh per 0.4 ha (1 acre) in stands not actively managed for 20 to 30 years on the Black Hills National Forest (Lentile and others 2000). These numbers mean that many stands have much lower than the number of snags recommended by many sources (Scott 1978; Scott and Oldemeyer 1983a; Raphael and White 1984; Zarnowitz 1985; Goggans 1989a; Bate 1995; see Table 17), so it is important to conserve as many snags as possible. (p. 23)<br><br>The existing conditions indicate that snag-dependent wildlife are again essentially living on deficit habitat, a situation that will only lead to declines and potentially extirpations of snag dependent wildlife. Lentile et al. (2000) estimate that snags in the BHNF greater than 10" dbh average only 3.96 per acre.<br><br>*(graph omitted)*<br><br>Spiering and Knight (2004) estimate that snags greater than 15" in diameter average 0.7 per acre. Currently, this is insufficient to meet the documented needs of several snag-dependent species. | *Snag density data are presented in Phase II FEIS Section 3-2.1 (Tables 3-3 and 3-4) regardless of whether the stands were recently harvested. This information was used to estimate the effects of managing for various structural stages on snag densities. The forest vegetation database shows more than 3 dead trees per acre that are greater than 9 inches in diameter in each structural stage. Therefore, snag recruitment (future snags) will be provided by the diversity of structural stages. The wildlife analysis (Phase II FEIS Section 3-3.3 and Appendix C) for snag-dependent species analyzed the effects of meeting the snag objectives, standards, and guidelines on cavity-dependent species.*<br><br>*See Phase II FEIS, p. III-7 – study by Lentile et al. (2002) cited and summarized.* |

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| *(table omitted)*<br><br>Indeed, as can be seen by the above table, several species require snag densities to be grater than 4/acre, some much larger. Although snag diameter requirements for the Sharp-shinned and Cooper's hawks are not reported, it is assumed that, like other wildlife, these snags should be greater than 10" dbh, which is currently required under the Phase I Amendment. As explained, densities of snags greater than 10" dbh are reported to be less than 4 by Lentile et al. (2002). And, although snag densities are based on burned areas in some cases, we assume that estimates of snag densities in the BHNF include recently burned areas.<br><br>Of more concern, however, are the extremely low densities of large diameter snags, or those greater than 15" dbh. The Lewis's woodpecker and silver-haired bat in particular require high densities of large diameter snags. Currently, snags greater than 15" dbh average 0.7 per acre, while the silver-haired bat requires 8.5 snags per acre greater than 17.32 inches and the Lewis's woodpecker requires 24 snags per acre greater than 18.7 inches. While the USFS claims that recent fires have created "extensive" areas of snags, the agency has yet to show what the average diameter of these snags are. If snag diameters are similar to live tree diameters on the BHNF, then it is highly likely that densities of large diameter snags even in burned areas are extremely low and likely below the needs of the black-backed woodpecker, Lewis's woodpecker, and others. Although black-backed woodpeckers have been found in the Jasper burn area, it is interesting to note that populations have been declining significantly in the last two years (Panjabi 2004). | *See Phase II FEIS, p. III-239 – populations of black-backed woodpeckers are often irruptive but then decrease as snags decay and beetles decrease.* |
| Adding to the concern over the inadequacies of existing densities of large diameter snags is the fact that snag recruitment will invariably produce fewer and fewer large diameter snags as the BHNF continues to experience extensive logging and thinning. To address the shortages of large diameter trees, there needs to be sufficient numbers of large diameter trees. Yet, the FEIS discloses that, in total, live trees greater than 15" dbh <u>average only 9.4 per acre across the entire BHNF</u>. <u>Trees greater than 20" average only 1.3 per acre</u>. Although if every tree greater than 15" were to die tomorrow and become snags, some of the problems may be solved, this is not what happens in reality. In reality, mortality is a slow process. While the FEIS presents no estimate of mortality rates, we have seen estimates in project-level EAs of less than one tree per acre per year. Thus, even by existing mortality rates, it is likely that sufficient numbers of large diameter snags will not come into | |

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| existence for years to come. However, this would only happen if stands were unmanaged. | |
| As it is, the USFS intensively manages the BHNF and is proposing to increase logging and thinning under the Phase II Amendment. The goal, as the USFS has stated on numerous occasions, is to reduce tree mortality. Logically, this would mean that forest management would reduce mortality rates, making it even less likely that sufficient large diameter snags will be produced within a reasonable timeframe. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to ensure future creation of sufficient densities of large diameter snags, logging ultimately removes many of these trees and, in combination with the associated mortality rate reductions, artificially keeps both the numbers of large diameter live trees and large diameter snags depressed (the snags more so). Ultimately, the Phase II Amendment is a recipe for further reductions in already much-reduced large diameter snag densities for decades to come. | *See Phase II FEIS, p. III-13 – the number of snags on the Forest has increased substantially in recent years due to disturbance events.*<br><br>*See Phase II FEIS, p. III-13 – snag recruitment will be provided by structural stage diversity.* |

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| Comment 21-54**: Snag Persistence**<br><br>Casting the efficacy of any snag retention standards into doubt, however, especially in relation to the retention of large diameter snags, is information that suggests snag persistence is seriously jeopardized when stands of trees are logged or thinned.<br><br>Indeed, although the USFS claims that snag persistence averages around 15 years, a review of data relies upon by the USFS suggests that this is not uniformly the case. In a statement by Brian Brademeyer, a local resident of the Black Hills and a civil engineer who graduated from the Massachusetts Institute of Technology, found that, based on Lentile et al. (2002), logging and thinning significantly reduce snag longevity. Based on simple math, Brademeyer found that, based on the data in Lentile et al. (2000), snag persistence is negatively correlated with basal area. In other words, snag persistence decreases as basal area decreases. Brademeyer found, for instance, that an existing 100-year old snag could be expected to persist for less than one year (only 7 months) after thinning a stand down to 40 basal area, even without direct damage to the snag through logging. By way of comparison, a 250-year old tree dying in an old-growth stand of 150 basal area could be expected to provide snag habitat for an average of 49.8 years, 4 times as long as a 100-year old tree. Similarly, reducing an existing stand (say 100-year old trees) from 110 basal area to 40 basal area would literally decimate existing snag habitat, reducing the future lives of existing snag from 6 years down to 7 months. The statement of Brian Brademeyer is attached to these comments as Appendix B.<br><br>Because the USFS assumes uniform snag persistence across the BHNF, the agency has prepared a flawed FEIS with regards to the analysis and assessment of impacts to snags and snag-dependent species of wildlife. Because the BHNF is so intensively managed, with most of the forest experiencing logging and thinning within the last 20 years, it can be expected that snag persistence has been significantly reduced. This would explain the extremely low snag densities. In addition, it also casts doubt as to whether proposed snag retention measures are sufficient. Even if snags<br><br>Other factors that affect snag persistence include snag removal for safety reasons, illegal firewood cutting, and inadvertently knocking down snags during timber harvesting operations. None of these impacts are addressed in the FEIS. | *The Phase II FEIS forested ecosystems chapter references two snag studies conducted on the Forest. Snag persistence is discussed in this research specific to the Black Hills.*<br><br>*There were no appendices attached to the comment letter submitted by Biodiversity Conservation Alliance.* |

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| Comment 21-55: **Old Growth and Old Growth Dependent Species**<br><br>Currently, there is a serious shortage of old growth forest on the BHNF. We consider old growth to be stands of older, dense trees with abundant snags and down woody debris. On a very basic level, this may equate to stands of SS 5. However, stands of SS 5 comprise less than 1.5% of the entire BHNF landscape. This poses serious dilemmas for old-growth dependent species of wildlife, such as goshawk, pygmy nuthatch, and American marten.<br><br>Indeed, there is a general positive correlation between pygmy nuthatches and the diameter (dbh) of pine trees (Rosenstock 1996, as cited in Ghalambor 2003). Rosenstock (1996) found a general positive correlation between pygmy nuthatches and the diameter of pine trees. Currently, large diameter trees are extremely scarce on the BHNF, likely contributing to the scarcity of the pygmy nuthatch. In addition, American marten are extremely dependent on dense canopy cover and abundant down woody debris, both typically associated with old growth forest (Buskirk 2002). The northern goshawk requires old growth forest for nesting (Erickson 1987, Greenwald 2004).<br><br>Unfortunately, the Phase II Amendment does nothing to protect or restore actual old growth forest habitat. Although late successional landscapes are designated, these areas do not consist entirely of old growth. Thus, to say that late successional areas provide sufficient habitat is like saying apples are oranges. Furthermore, proposed structural stage objectives are only objectives and do not require that any level of SS 5 be retained or restored. As the USFS is proposing to increase logging and thinning, the future of old growth forest on the BHNF is cast into doubt and with it, the fate of old growth dependent species of wildlife.<br><br>Although the USFS may claim that more logging or thinning will lead to the quicker development of old growth, this myopic view of the BHNF is fundamentally flawed. For one thing, while thinning may lead to quicker tree growth, there is no measure in place that ensures that the tree will not be cut for timber at some point down the road. Secondly, old growth is characterized by abundant snags, not simply large diameter trees. Thinning or logging by their nature reduce snags by reducing basal area and reduce future snag recruitment by inhibiting tree mortality. Furthermore, by logging or thinning, the USFS is reducing down woody debris availability, which is also a component of old growth forest. Finally, studies have | *The Forest uses the term "late successional" to depict older forest conditions. The late successional definition used in the Phase II FEIS is described in Chapter 2-1.2 and is consistent with 1997 Forest Plan Chapter 3. The selected Phase II alternative replaced Objective 207 with Objectives 4.1-203, 5.1-204, 5.4-206, 5.43-204, and 5.6-204, which manage for 5% of the ponderosa pine forested land in these management areas in late succession in addition to the Late Succession Management Area (3.7). Effects of the selected alternative are discussed in the Phase II FEIS. For more information on effects, see the discussion of brown creeper (management indicator species for late-successional conifer habitat) in Phase II FEIS Section 3-3.3.7.2.*<br><br>*Use of the term "old growth" can be confusing due to variation in definitions used. The Forest used the term "late successional" as defined by Structural Stage 5. Structural Stage 5 is defined in Chapter 2 of the Phase II FEIS. See Phase II FEIS Appendix D. Objectives 207, 4.1-203, 5.1-204, 5.4-206, 5.43-204, and 5.6-204.* |

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| found that species like the brown creeper, fringed myotis, and northern goshawk are sensitive to disturbance (see e.g., Anderson and Crompton 2002). The brown creeper in particular is not found in logged areas. By logging or thinning stands to create large diameter trees, the USFS is directly rendering such habitat unusable for many old growth dependent species of wildlife.<br><br>The Phase II Amendment does not explicitly protect and restore old growth forest habitat and as such, fails to ensure the viability of old growth dependent species of wildlife. | |
| Comment 21-56: The FEIS is surprisingly silent on the concern of forest fragmentation. This, despite the fact that the Chief specifically pointed to the failure of the 1997 Revised BHNF LRMP and FEIS to appropriately address fragmentation in the context of providing habitat sufficient to ensure viable populations of wildlife. This is further surprising given recent scientific information that has come out not only criticizing the 1997 Revised BHNF LRMP for failing to adequately analyze and assess fragmentation impacts, but also raising serious concerns over the impacts of fragmentation to wildlife in the BHNF.<br><br>After conducting a thorough analysis of fragmentation in the northern Black Hills, Shinneman and Baker (2000) specifically criticize the fragmentation "analysis" in the 1997 Revised BHNF LRMP, stating:<br><br>> Although the U.S. Forest Service made an effort to duplicate our landscape structure analysis methods in the Black Hills National Forest Final Environmental Impact Statement (Price, *unpublished manuscript*; USDA Forest Service 1996b), this 'revised' version of our research failed to adequately identify important patch characteristics, incorrectly measured landscape structure, did not compare the current managed landscape structure to pre-EuroAmerican landscapes, and ignored the spatial status of old growth forests altogether (D.J. Shinneman, *unpublished manuscript*). These inadequate analyses, combined with a lack of comprehensive digitized spatial data for forest harvest activities, initial over-estimations of old-growth, and under-estimations of the spatial extent of road impacts, have probably led to the misinterpretations of the current forest structural conditions on the Black Hills. (p. 331) | *Fragmentation relevance and effects vary by species and their respective habitat needs and mobility. Each alternative offers a different approach to biodiversity and fragmentation. For a discussion of various species see Phase II FEIS Section 3-3 and Appendix C. Also please refer to the discussion of fragmentation and related issues in the 1997 FEIS for the Revised Forest Plan, on pages III-247 through III-275. The Forest relied on various information sources to analyze the extent to which fragmentation characterized the forest area historically. The Custer expedition photos and reports from the Dodge expedition indicate the Forest's natural conditions were more fragmented than they are today.*<br><br>*The Phase II FEIS disturbance ecology section considers available research, including Baker and Shinneman.* |

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| The two make the following recommendations for addressing fragmentation in the BHNF, stating:<br><br>> In contrast to USFS recommendations, our analysis suggests that restoration of the Black Hills National Forest landscape to its range of natural variability will require: (1) restoration and maintenance of some large patches in order to regain large interior areas, (2) restoration of large areas of dense old-growth forest in order to increase rare interior old-growth habitat, (3) a strategy for road closures, as well as careful site selection for new roads, to reduce road edge habitat on the landscape, and (4) a management plan that maintains or restores connectivity between large core areas with similar habitat in order to reduce the degree of habitat isolation for species dependent on habitats such as old-growth forest (e.g., Noss and Harris 1986). (p. 332)<br><br>As of yet, we are waiting to see the USFS give the findings and recommendations of Shinneman and Baker (2000) any serious consideration. The Phase II Amendment does not attempt to address fragmentation and restore fragmented landscapes. There is no identification of areas with large amounts of old growth that could be maintained and restored, there is no attempt to restore large areas of dense old growth forest (see, Improper Reliance on Goals, Objectives, and Guidelines discussion above), no strategy for road closures, and no attempt to maintain or restore connectivity between large core areas with similar habitat. As responsible opposing views, their scientific findings at least deserve substantial treatment, especially in the context of ensuring viable populations and meeting the diversity mandate of NFMA, and their recommendations deserve full, careful, and objective consideration.<br><br>In the context of wildlife populations, fragmentation is indeed a serious concern. Habitat fragmentation can isolate and reduce populations of less mobile species, such as Black Hills red-backed vole (*Clethrionomys gapperi brevicaudus*) and Black Hills flying squirrel (*Glaucomys sabrinus*), making them more vulnerable to stochastic events, which can in turn be exacerbated by habitat degradation (Wilcox and Murphy 1985, Lande 1993, Ruggiero et al. 1994, Couvet 2002, Carroll et al. 2004). Both the red-backed vole and flying squirrel have been found to be negatively impacted by habitat fragmentation (Nordyke and Buskirk 1991, Waters and Zabel 1995, Beauvais 1997, Martin and Anthony 1999, Reunanen et al. 2000). In addition, the pine marten, a | *Fragmentation relevance and effects vary by species and their respective habitat needs and mobility. Large tracts of unlogged, mature forest may represent less fragmented conditions for some species, while representing less diversity for others (e.g., grassland species). Abundance and distribution of habitat is discussed for the individual wildlife species for which fragmentation is a concern in Phase II FEIS Chapter 3, Section 3-3. Also refer to the 1997 FEIS for the Revised Forest Plan, pp. III-247 through III-275, for a discussion and evaluation of fragmentation.* |

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| sensitive species on the BHNF, requires dense canopy cover for habitat, also making the species sensitive to fragmentation (Buskirk 2002). In addition, fragmentation raises serious concerns over the genetic fitness of populations of wildlife on the BHNF. Fragmentation can lead to detrimental inbreeding and a build up of mildly deleterious mutations, both of which can impair population survival (Lacy 1987, Couvet 2002).<br><br>On the Black Hills in particular, fragmentation is reported to be negatively impacting the brown creeper, a proposed management indicator species ("MIS") (Anderson and Crompton 2002). Virtually echoing the concerns of Shinneman and Baker (2000), Anderson and Crompton (2002) state that to ensure protection of the brown creeper across the BHNF landscape, "large tracts of unlogged, mature forest should be retained throughout the Black Hills" (p. 372). The two continue:<br><br>> These areas contain the habitat characteristics associated with many timber-gleaning insectivores and ovenbirds. As the landscape becomes more fragmented, the value of large contiguous tracts of dense forest will become increasingly important to maintain populations of interior-dwelling birds. (Id.)<br><br>Fragmentation therefore warrants thorough and additional consideration and analysis in the FEIS. In the context of maintaining viable populations, the USFS must, as Anderson and Crompton (2002) recommend, retain large tracts of unlogged, mature forest. As proposed, the Phase II Amendment does not do this. And, neither alternative specifically addresses the need to retain mature forest of particular patch sizes. Thus, the ability of the Phase II Amendment to ensure viable populations of species sensitive to fragmentation, such as brown creeper, Black Hills red-backed vole, Black Hills flying squirrel, and pine marten, is very much unsupported. | |
| Comment 21-57: **Management Indicator Species**<br><br>Population objectives for management indicator species are not supported by scientific literature or by any other analysis or information. Indeed, recent studies have concluded that to maintain a viable population of a vertebrate species, sufficient habitat should be provided to support at least 7,000 breeding adults (e.g., Reed et al. 2003, 2004). For the black-backed woodpecker and golden-crowned kinglet, the USFS's proposed population objectives are below 7,000, the minimum viable number as recognized in the scientific literature. | *MIS objectives are based on desired outcomes for each species. Analysis and scientific background are discussed in Phase II FEIS Chapter 3, Section 3-3.3.*<br><br>*Species viability is not evaluated at the project level, but rather at the Forest level as required by 36 CFR 219.19.*<br><br>*The viability of MIS that are also sensitive species is disclosed in the Phase II Amendment Biological Evaluation (Appendix C). The viability of MIS that are not sensitive species is disclosed in the Phase II FEIS.* |

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| It is unclear how the USFS believes it is complying with laws and regulations if its objective is to maintain unviable populations. Similarly, population objectives for yellowthroat allow for 6,000 individuals. Obviously, the number of reproductive individuals would be much lower.<br><br>Furthermore, it is unclear whether the population objectives are based on total individuals or reproductive individuals. If the objectives are based on total individuals, then the actual number of breeding individuals may be much lower, perhaps lower than 7,000. As it is, the NFMA regulations define viable populations based on number of reproductive individuals. The USFS needs to explain how proposed MIS population objectives relate to numbers of reproductive individuals in order to support the numbers as valid and representative of viable populations.<br><br>As it is, the USFS has not even shown that current populations of MIS are viable, or in other words that a sufficient number of reproductive individuals exist to ensure the species continue to exist well distributed on the BHNF. As a basic critique, the USFS has not even shown that current populations of breeding adults are at 7,000 or higher.<br><br>The Phase II Amendment also fails to provide for the monitoring of MIS populations as required by regulation. | *The selection of MIS followed the Regionally approved process identified in Hayward et al. 2001. Monitoring of MIS is to be based on protocols designed to collect the data needed to evaluate the attainment of MIS-specific objectives.* |
| <u>Comment 21-58</u>: **Viability of Sensitive Species**<br><br>The USFS fails to adequately analyze and assess impacts to sensitive species, rendering its viability determinations unsupported and arbitrary and capricious. In particular, for most, if not all, sensitive species, the USFS fails to provide information disclosing the current population sizes of sensitive species, in particular the number of reproductive adults, the current distribution of populations of sensitive species, and fails to disclose whether these populations correlate to a viable population as defined at 36 CFR § 219.19. The agency's determination that viable populations of sensitive species will be maintained is thus, invalid.<br><br>The FEIS and the USFS's viability determinations also seem to rely heavily on an assessment of habitat based only on the amount of forest in a particular habitat structural stage. While not called "habitat capability model," or "HABCAP," this method of analyzing and assessing impacts seems to be essentially the same thing. Yet, there is no support of its effectiveness in adequately | *Available information on sensitive species status, abundance and distribution is presented in Phase II FEIS Appendix C. Data on number of reproductive individuals are not complete for most wildlife species on the Forest. The analysis used the best information available.*<br><br>*Structural stage is not the only measurement of habitat considered in the Phase II analysis. Features such as snags, downed logs, and riparian habitat were included in the analysis. The analysis also accounted for species-specific conservation measures such as goshawk nest protection, snail colony conservation measures, and bat hibernacula conservation measures.* |

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| analyzing and assessing impacts to sensitive species, especially snag-dependent sensitive species. Given that snag densities are below what several wildlife species need, that snag diameters are below what several wildlife species need, and that snag persistence is exceedingly short in managed stands, it is difficult, if not impossible, to understand how a simple measure of how much SS 4C, 4B, etc. exists on the BHNF can provide any insight into the status of habitat for snag-dependent sensitive species. | |
| In addition, cumulative impacts are poorly addressed. Of particular concern is that through virtually every project level decision, the USFS discloses that individual sensitive species will be impacted, but that their populations will not be affected. Yet, these impacts to individuals add up and, as cumulative impacts to sensitive species, must be addressed in the Phase II Amendment biological evaluation. | *The Phase II FEIS acknowledges that some projects may affect individuals of various species. The cumulative effects sections discuss additional impacts from other federal and non federal actions.* |
| Another concern is that the Phase II Amendment does not explicitly require the maintenance of viable populations. No Standard exists that requires the USFS to maintain viable populations. We request the USFS include a Standard that requires that sufficient habitat be provided to ensure viable populations of sensitive species be maintained in accordance with 36 CFR § 219.19 and relevant USFS policy. | *Maintaining viable populations of native and desired non-native plants and animals is required through the National Forest Management Act (Section 6(g)(3)) and USDA Departmental Regulation 9500-4. It is not necessary to repeat this requirement as a standard in the Forest Plan.* |
| <u>Comment 21-59</u>: **Viability, Management of Species of Local Concern**<br><br>The Phase II Amendment fails to provide sufficient direction to ensure the viability of species of local concern and the FEIS fails to adequately analyze and assess impacts to species of local concern. Of particular concern is that the USFS has not gathered baseline population data for virtually every species of local concern to determine whether or not viable populations exist in the first place. The USFS seems to be operating under the unsupported assumptions that populations are automatically viable because the agency says so. This is an invalid approach to ensuring species viability for species of local concern. Because the USFS lacks basic population data and has failed to even assess whether viable populations exist in the first place, the USFS has no basis upon which to conclude the Phase II Amendment and any action alternative will maintain the viability of species of local concern. | *Designation of species of local concern was based on eight criteria incorporating the best available scientific information. This included baseline population data when available in the form of abundance estimates and/or population trend. All alternatives considered in the Phase II FEIS include goals, objectives, standards and guidelines to conserve species of local concern and their habitat in a multiple-use context. A discussion of the applicable objectives, standards and guidelines is included in the Phase II FEIS, Section 3-3.3.3 through 3-3.3.5.* |
| Furthermore, we strongly recommend the USFS adopt our proposed "Survey and Manage" standards, as proposed in the Conservation Alternative, rather than the species of local concern designation. The Survey and | *The "survey and manage" species designation has not been adopted for use in the Rocky Mountain Region.*<br><br>*There are no appendices attached to the comment letter* |

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| Manage standards have been adopted on other National Forests. A copy of the description of these Standards as applied on other National Forests is attached to these comments as Appendix C so that the USFS can understand how and why they are applied. | *submitted by Biodiversity Conservation Alliance.* |
| Comment 21-60: **Marten**<br><br>The Phase II Amendment promises entirely inadequate protection for the marten. Part of the problem is that the USFS characterizes the ponderosa pine forests of the Black Hills as a "low-severity" fire regime. This characterization is inconsistent with the needs of the marten. The marten depends upon complex forest structure near the ground provided by coarse woody debris and/or tree branches and facilitated by long fire return intervals (Buskirk 2002). According to Buskirk (2002):<br><br>> In the West, martens tend to select for moist-site tree species that grow in stands characterized by living branches on the lower boles of trees, abundant coarse woody debris (CWD), and lengthy fire-return intervals. (p. 14)<br><br>Buskirk elaborates (2002):<br><br>> …the accumulation of CWD reflects long fire-return intervals, because large logs result from old trees. Structure near the ground fulfills the need by martens for protection from predators, access to subnivean spaces in winter, and protected resting sites (Buskirk and Ruggiero 1994). (p. 15)<br><br>Thus, the presence of the marten is an indication that some, if not most, ponderosa pine forest in the Black Hills is in a mixed-severity fire regime, or one characterized by relatively infrequent stand-replacing fires. Although the marten prefers white spruce, Buskirk (2002) reports that it is impossible for the marten not to utilize ponderosa pine forest, especially more mesic sites, in the BHNF given the extremely low abundance and fragmented nature of white spruce forest in the Hills.<br><br>The habitat needs of the marten raise concerns that, by pushing for increased logging and thinning and erroneously operating under the assumption that the ponderosa pine forest of the Black Hills should be entirely "open and park-like," the USFS will push the marten to extirpation. Compounding this is that the | *The effects on marten are discussed in the Phase II Amendment Biological Evaluation (Appendix C). Included is a discussion of spruce habitat and habitat connectivity for marten.* |

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| USFS has not addressed the impacts of forest fragmentation to the marten and is not proposing any direction to restore fragmented landscapes in the BHNF under the Phase II Amendment. Indeed, no Standard under the Phase II Amendment addresses the need to protect or restore habitat connectivity to ensure the marten persists. As it is, by relying on structural stage objectives, the USFS is essentially disavowing any responsibility to the marten and its habitat and is not meeting its diversity and viability requirements with regards to the marten. | |
| <u>Comment 21-61:</u> **Northern Goshawk**<br><br>The Phase II Amendment is an utter disappointment with regards to management of the northern goshawk. As proposed, the Amendment takes a huge step backwards in terms of protecting, nesting, post-fledging, and foraging habitat for the northern goshawk. Of particular concern is that habitat is already seriously limited on the BHNF. As discussed above, stands of dense, old growth forest are extremely scarce on the BHNF, large diameter trees are extremely scarce, densities of large diameter snags are extremely low, and disturbance is widespread. Adding to this the recent loss of habitat as a result of fires, nest vandalism, storm damage, and windthrow, the goshawk is facing an uphill battle to survive in the BHNF. These cumulative impacts are not appropriately assessed in the FEIS.<br><br>In addition, the Phase I Amendment provided entirely inadequate protection for the northern goshawk and its habitat. The lack of substantive nesting habitat protection under the Phase I Amendment is of particular concern because there exists a serious shortage of suitable nesting habitat on the BHNF. Indeed, old growth forest, which is preferred as nesting habitat by the northern goshawk throughout the western United States (e.g., Kennedy 2003, Greenwald et al. in press), comprises less than 1.5% of the entire BHNF and a fraction of this is likely even suitable for nesting. Goshawks in the Black Hills select nest sites that are in even aged, old growth ponderosa pine stands (Erickson 1987). Specifically, Erickson (1987) explained:<br><br>Generally, goshawks in the Black Hills National Forest can be found above 1550 meters elevation, on gently sloping benches within ponderosa pine stands that face west-northwest. The nest tree can usually be found within 100 meters of a logging road or forest opening. Nest site basal area within the stand ranges from 29.97 $m^2$/ha to 56.32 $m^2$/ha. Mean tree size at the nest site ranged from 19.5 to 41.3 cm (dbh). Canopy coverage within the stand was found to range from 59.8 to 85.0 | *Northern goshawks are discussed in Phase II FEIS Appendix C. The effects from recent natural disturbance processes were considered in the analysis.*<br><br>*The vegetation database for the Forest shows approximately 300 acres dominated by very large, old trees (16"+ diameter and 160+ years old). The database shows approximately 71,000 acres of other very large trees (16"+ diameter, but may be less than 160 years old).*<br><br>*Structural stages – see response to Comment 21-58, sensitive species.* |

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| percent. Total understory coverage at the nest site varied from 3.65 to 130.3 percent. (p. 27) | |
| The Southwest Guidelines indicate ponderosa pine stands in Vegetation Structural Stage ("VSS") 5 with 40% or more canopy cover and VSS 6, or ponderosa pine stands 16-22" DBH compose goshawk nesting habitat (Reynolds et al. 1992). According to the 2000 Phase I Goshawk Analysis prepared for the Phase I Forest Plan Amendment, this equates to mid-range VSS 5 (i.e., VSS 550 or 560), and VSS 6 (USFS 2000a), which may also represent the nest site characteristics reported by Erickson (1987). Under the Phase I Amendment, PFAs should have 15-25% of their area in VSS 6 and 15-25% of their area in VSS 5. Yet, virtually every designated PFA on the BHNF has no VSS 6 and inadequate VSS 5 (e.g., USFS 2004a, 2004b). As a result of the lack of hard, substantive nesting habitat protection, the USFS has unfortunately actively reduced potential and/or existing nesting habitat in PFAs through several projects, favoring the creation of overly represented, early successional habitats, such as VSS 1, 2, and 3. Although habitat in VSS 1, 2, and 3 may be utilized by northern goshawks, such utilization is contingent upon the existence of adequate and suitable nesting habitat. By managing strictly for early successional habitat and inhibiting the creation of future nesting habitat, the USFS has been ensuring the eventual demise of the northern goshawk on the BHNF. | *Goshawks are often difficult to locate during surveys and often alternate nests each year. As such, there will likely always be nests on the Forest that have not been discovered. The structural stage objectives provide nesting habitat (usually structural stage 4B, 4C, or 5) well dispersed across the Forest. Specific standards (3108 and 3111) focus some of that nesting habitat around known nests. This approach provides habitat Forest-wide as well as around known nests. The process for conducting surveys for sensitive species is outlined in the Forest Service directives (FSM 2670.43) and does no need to be repeated in the Forest Plan.*<br><br>*Standard 3111 addresses disturbance around goshawk nests. The standard is written to allow some flexibility because goshawks sometimes build nests within a half-mile of heavily used roads, trials or other facilities. In these cases, the goshawk likely selected the site for other habitat characteristics in spite of the disturbance. Additional disturbance to the goshawk is not desirable, but in some cases halting the ongoing activity may not be necessary.* |
| Thus, to ensure the viability of the northern goshawk on the BHNF, the Phase II Amendment must provide for the protection and creation of nesting habitat. Unfortunately, the Phase II Amendment entirely fails to do so. To begin with, the Phase II Amendment provides no protection for goshawk post fledging habitat, which was a key principal of the Phase I Amendment. Although there has been no research on post-fledging habitats in the Black Hills specifically, research throughout the west has consistently demonstrated that the northern goshawk utilize a post-fledging area that consists primarily of old growth forest (Kennedy 2003). It is unclear why the USFS decided to reject managing for goshawk post-fledging areas on the BHNF. Secondly, the USFS relies heavily, if not entirely, upon structural stage objectives to ensure adequate goshawk habitat is protected and/or created across the landscape. As discussed earlier, these objectives provide for no measurable results, are entirely discretionary, and therefore provide no actual benefits to the northern goshawk or its habitat. Thirdly, the USFS is proposing only to protect known nest sites, and then only 180 acres of "best suited" habitat around these nests. This is a wholly irresponsible. For one thing, nothing in the | |

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| Phase II Amendment requires surveys to ascertain the presence of nest sites, so in all likelihood occupied nesting habitat will be impacted by future logging and thinning. In addition, by limiting attention to only known nest sites invariably means that the USFS will be managing for no nesting habitat. In essence, as known nest sites are lost to fire, windthrow, vandalism, etc. the USFS has no measure in place to compensate that loss through the protection of suitable habitat. Once an active nest site is gone, its loss is permanent and that habitat will no longer be protected. Ultimately, this will mean the USFS will manage for <u>no</u> goshawk nesting habitat in the BHNF. | *The ecosystem approach for each alternative is discussed in Phase II FEIS Appendix C, Section 4-6.10.3.* |
| In addition, the proposed Phase II Amendment does not explicitly prohibit disturbance of goshawk nest sites. Standard 3111 is, to say the least, biologically absurd. To begin with, the Standard only requires disturbance to be "minimized," so therefore ensures no level of actual protection from disturbance. Next, the Standard only limits disturbance "beyond that occurring at the time of nest initiation." This Standard therefore lacks any substantive protection. For one thing, there is no monitoring mechanism in place or proposed to ensure the USFS will be able to understand what disturbances were occurring at the time of nest initiation. As it is, it is difficult, if not impossible, to understand how the USFS intends to be able to determine when nest initiation occurs at every active goshawk nest on the BHNF in order to ensure disturbances do not occur "beyond that occurring at the time of nest initiation." Finally, even if disturbance may be occurring at the time of nest initiation, this doesn't mean that it is healthy or will not negatively impact northern goshawk.. Kennedy (2003) states, "Human disturbance associated with forest management and other activities may affect goshawks and can cause nest failure, especially during incubation (Boal and Mannan 1994, Squires and Reynolds 1997). Camping near nests has caused nest failure (Speiser 1992)" (p. 144). Thus, even if nests are "initiated," human disturbance could cause nest failure during incubation or otherwise cause breeding pairs to unsuccessfully reproduce. It is irresponsible for the USFS to allow disturbance around goshawk nest sites period from March 1 through August 31. | *The ecosystem approach to providing goshawk nesting, fledging, and foraging habitat for each alternative is discussed in Phase II FEIS Appendix C, Section 4.6.10.3. Effects on foraging habitat are also discussed in this section. Snags and down woody material are discussed in the goshawk section of Appendix C. Snags are discussed in Phase II FEIS Chapter 3, Section 3.2, and also in the goshawk section in Appendix C.*<br><br>*Every attempt was made to interpret the goshawk literature correctly. The Phase II ID team consulted with leading goshawk scientists to help interpret available science. A population viability analysis (PVA) model was not used in the analysis because information needed for such an analysis (mortality rates, reproductive rates) are not available for the Black Hills. The analysis was based on habitat requirements and habitat availability expected under each alternative. The analysis considers the dynamic nature of Black Hills ponderosa pine ecosystems (Section 3-2.1 in the Phase II FEIS), including natural disturbance processes (Section 3-7 in the Phase II FEIS).* |
| Of greatest concern is that the Phase II Amendment lacks a landscape approach to goshawk habitat protection. A landscape approach was recommended by experts during the Phase I Amendment (USFS 2000b) and considered during the Phase I Amendment process, but was subsequently rejected by the USFS, partly because the Phase I Amendment was only interim management direction. Why the USFS ignored expert | |

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| recommendations and refused to propose landscape level habitat protection is beyond us. However, it is a strong sign the USFS has failed to provide adequate protection for the goshawk and its habitat on the BHNF. | |
| Compounding the failure to provide adequate nesting habitat through the Phase II Amendment is that the USFS is also failing to provide for adequate foraging habitat. Indeed, by failing to appropriately manage for abundant, large diameter snags, down woody debris, and large diameter trees, the USFS is failing to ensure adequate habitat for prey species. Kennedy (2003) states: | *Goshawks are discussed in Phase II FEIS Appendix C, Section 4-6.10.* |
| Although the species on which goshawks prey vary among forest types and regions, there are a few habitat features that appear to be important to a variety of prey species (Reynolds et al. 1992, USFWS 1998b). These features include snags, downed logs (> 30 cm in diameter and 2.4 m long), large trees (> 46 cm in diameter), openings and associated herbaceous and shrubby vegetation, interspersion, and canopy cover. (p. 102)<br><br>Unfortunately, current conditions on the BHNF are such that snags of sufficient diameters are relatively scarce, large diameter trees are lacking, and down woody debris is not abundant or well distributed. Compounding this problem is that the proposed Phase II Amendment, be prescribing increased logging and thinning, will only exacerbate snag shortages, lead to further reductions in large diameter trees, and inhibit down woody debris recruitment. | *The number of individuals for any species varies annually based on climate, weather, mortality, predation, disease and other factors. The Forest Service is charged with making a determination based on the best information available. There is always because information is always incomplete due to the nature of the data. To eliminate uncertainty would require determining reproductive success, emigration, immigration and mortality rates for each bird on the Forest. This is neither practical nor feasible for goshawks or other Forest species.* |
| In addition, even if goals, objectives, or guidelines could provide the habitat the USFS claims, it is unclear whether this will, in fact, lead to viable populations of northern goshawk. Indeed, there is no information suggesting that nesting habitat, as defined by Erickson (1987), will be provided in sufficient patch sizes for nesting or that it will be well distributed across the BHNF. There is no spatial context for the USFS's assertion that sufficient habitat will be provided to ensure goshawk viability. Furthermore, there is no spatial context for population use of habitat on the BHNF and thus, no basis for the USFS to conclude that northern goshawk will even utilize much of the potentially suitable nesting habitat that exists in the BHNF. In fact, studies have criticized the use of simple measures of habitat quality to assess population viability without the use of spatially explicit population models in relation to the northern goshawk (Lawler and Schumaker 2004). | |

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| Finally, the USFS has failed to demonstrate that northern goshawk populations are currently viable according to regulations. Of particular concern is that reports indicate the Black Hills should be capable of supporting at least 300 breeding pairs of northern goshawk. In an article in the March 1998 issue of Wyoming Wildlife, USFS scientist Richard Reynolds was quote as saying:<br><br>I've been out on the Black Hills [National Forest], and they've got an area that's at least three or four times as big as the Kaibab Plateau, and they say, 'We've got birds everywhere!' And I say, 'Well, how many do you have?' And they say, 'Oh, we've got twenty or thirty pairs.' And I say, 'Wait a minute; you've got enough area for probably 300 pairs. (Madson 1998, p. 35)<br><br>However, the problem with the FEIS is that there is no actual population data even provided that shows a sufficient number of reproductive individuals exist to ensure the species' long-term survival. There certainly is no data suggesting that 300 pairs inhabit the BHNF. Although the USFS cites the number of "active" nests in the Biological Evaluation, there is no information or analysis presented or referenced that shows how such data correlates to a viable population in terms of number of reproductive individuals. Adding to this the failure of the USFS to ensure even basic protection and much-needed restoration of nesting, post-fledging, and foraging habitat, the agency is admittedly failing to ensure the viability of the northern goshawk. | |
| <u>Comment 21-62</u>: **Snail Species of Concern**<br><br>The USFS states in Chapter 1 of the DEA that:<br><br>The Frest Report did not substantiate the allegations of habitat modifications or reference particular areas or habitats where snails were documented to have been lost. Additional surveys have been conducted under the Black Hills Monitoring guide and by researchers. New information suggests that the snail colonies may be dynamic, and that new colonies of snails were located. (p. 1-15)<br><br>The USFS must be seriously confused. Frest and Johannes (2002) reported visiting hundreds of survey sites throughout the BHNF and described the conditions at every survey site. For many sites, habitat was so degraded, snail species of concern could not be found. In other areas, habitat degradation had obviously occurred, such as a site where poor fence maintenance allowed cattle to trample a snail species of concern colony. Losses of colonies were also reported. Did the | *The 1993 and 2000 Frest and Johannes reports were used and referenced in the analysis. The reports serve as valid surveys of snail occurrence and distribution. The Phase II FEIS discloses uncertainty associated with the taxonomy of Cooper's mountainsnail because suggested taxonomic changes have not been peer reviewed and accepted via the scientific community.* |

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| USFS even read this report? If not, that would be very disappointing since the agency paid for it.<br><br>Nevertheless, this sentence is a telling introduction into the incredibly flawed analysis of the Phase II Amendment upon snail species of concern. Compounding this flawed analysis is the fact that the Phase II Amendment provides no mechanism that actually ensures the protection of colonies of snail species of concern. No specific measures are provided. This is a serious departure from previous direction and there is no explanation as to why the USFS has proposed to eliminate protections for snail species of concern. Indeed, other National Forests have taken their duty to protect diversity, including terrestrial mollusks, very seriously (see e.g., Burke et al. 1999). We cannot understand why the USFS has not undertaken a similar effort as Burke et al. (1999) in terms of developing appropriate management recommendations for snail species of concern on the BHNF. Regardless, we recommend that the recommendations of Burke et al. (1999), especially those related to *Oreohelix* and *Vertigo* species, be applied to the snails in the BHNF.<br><br>To say the least, the FEIS presents a paltry analysis of impacts to snail species of concern, especially *Oreohelix* species of concern. The USFS does not verify its reports of "new colonies," whether these new colonies are viable are even abundant, and does not explain which *Oreohelix* species are found at any of these "new" colonies. In fact, the USFS seems to outright reject the proposed taxonomic conclusions put forth by Frest and Johannes (2002). As the two report, the BHNF supports three endemic *Oreohelix* species: The Black Hills mountainsnail (*Oreohelix cooperi*), the Pahasapa mountainsnail (*Oreohelix* n. sp. 1), and Bear Lodge mountainsnail (*Oreohelix* n. sp. 2). Frest and Johannes (2002) provide a detailed discussion as to why they propose these taxonomic distinctions, including comparisons with other related species, anatomical data, and morphometrics. The discussion is similar, if not more thorough, than what is typically found in a published journal (see e.g., Fairbanks 1984). In addition, Frest and Johannes (2002) discuss the obvious concerns over the validity of the *Oreohelix strigosa* species given the fact that the species is not found in its reported type locality. The only reason these descriptions haven't been published is due to a lack of resources—it costs money to publish, so scientists, especially malacologists who are so few to begin with, prioritize their efforts.<br><br>The FEIS does not even mention the Bear Lodge mountainsnail, nor does the Phase II Amendment | |

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| propose any special designation. This is of serious concern since only 6 extant colonies of the species are known from the Bear Lodge mountains (Frest and Johannes 2002). Previously, this species was believed to be *Oreohelix strigosa berryi*. There is no explanation in the FEIS as to why the USFS believes the species doesn't warrant conservation attention or why it all of a sudden believes it does not exist. The FEIS further lumps the Black Hills and Pahasapa mountainsnail as one species. No explanation can be found in the FEIS for why the USFS chose to do this. In other words, the USFS has entirely failed to explain why it ignored relevant and substantial scientific information regarding the taxonomy of *Oreohelix* species in the BHNF. By ignoring relevant taxonomic information, the USFS has failed to adequately assess impacts to *Oreohelix* species of concern. This is of particular concern given the fact that snails are considered to be ecological indicator species and attention to their status should be a priority for land managers (Niwa et al. 2001). | |
| While the USFS is obviously abusing its discretion in rejecting scientific conclusions made by the Frest and Johannes (1993 and 2002) reports (indeed, the agency could simply call Dr. Terrence Frest at (206) 527-6764, which is the phone number of Deixis Consultants displayed on the cover of Frest and Johannes (2002)), we feel it is necessary to include in our comments our petition to list the Black Hills mountainsnail under the Endangered Species Act, which was submitted in September of 2003 and is currently being litigated to compel the Secretary of the Interior to review it. This petition is attached as Appendix D. This petition presents a substantial synthesis of the status of this species and its habitat, threats facing the species, and problems in current management. The petition is a collection of the best available scientific information, which the standard used by the Endangered Species Act. Apparently the USFS uses the "best available science the agency likes" standard. In any event, we request the following information be considered as comments on the Phase II Amendment in relation to its ability to protect *Oreohelix* species of concern and specifically, the Black Hills mountainsnail. In particular, we request the comments be used to ensure the FEIS presents an adequate analysis and assessment of impacts to the Black Hills mountainsnail, to ensure the Phase II provides adequate direction, and to ensure the USFS utilizes accurate information to make a well-informed, biologically sound, and legally adequate decision under the Phase II Amendment. We also caution that if the USFS continues to take this tact with regards to rare snails in the BHNF, the agency should expect more petitions to be filed. Indeed, the Endangered Species | *There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.* |

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| Act exists for this reason, to ensure agencies do not inappropriately ignore the status of species threatened with endangerment or extinction. | |
| Comment 21-63: **Mountain Pine Beetle**<br><br>We seriously question the USFS's assumption that simple reductions in stand density will reduce mountain pine beetle risk on the BHNF. Not only has extensive past logging apparently failed to lessen the risk of future pine beetle infestation, but studies have found that infestation is not a function of stand density in the Black Hills. In a study of mountain pine beetle risk in thinned and unthinned stands on the BHNF, Schmid et al. (1991) found that there appears to be no relationship solely between stand density (i.e., basal area) and mountain pine beetle risk and susceptibility. Schmid et al. (1991) state:<br><br>The success of partial cutting in reducing MPB-caused mortality is frequently attributed to the change in host resistance created by the reduction in stand density (Mitchell et al. 1983). The relatively equal but moderate to severe stress levels among GSLs [growing-stock levels] observed in this study suggests that host resistance would be relatively equal among our GSLs. If host resistance is relatively equal, then differential MPB-caused mortality among various GSLs must be influenced by other factors, such as microclimate, as suggested by Bartos and Amman (1989). Host resistance by itself may not be totally responsible for the differential mortality. (p. 754)<br><br>The FEIS does not address the possibility that mountain pine beetle risk is not related to stand density and consequently, fails to adequately analyze and assess the impacts of the Phase II Amendment to mountain pine beetle risk. In addition, because risk is not entirely related to stand density, the USFS's assumptions underlying the Phase II Amendment, namely that logging or thinning are needed to address any purported mountain pine beetle risk, are unsupported. | *Scientific literature indicates a correlation between stand density and the incidence of mountain pine beetle infestation. Please refer to the Natural Disturbance Processes section of Chapter 3 of the Phase II FEIS.* |
| Comment 21-64: **Riparian and Wetland Habitat**<br><br>Cumulative impacts to riparian and wetland habitats are not appropriately analyzed or assessed. Despite disclosing widespread loss and degradation, the USFS seems to imply that such losses and degradation are not significant impacts, nor are they affecting the viability of native species. This is especially of concern given that the decline and degradation of wetland and riparian habitats has negatively impacted the northern leopard | *The Phase II FEIS analyzed the status and trend of riparian and wetland habitat in Section 3-2.3.* |

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| frog, a sensitive species on the BHNF (Smith 2003). In addition, the best available scientific data strongly indicates riparian and wetland habitat loss and degradation is negatively impacting the Bear Lodge meadow jumping mouse (Center for Native Ecosystems et al. 2004). We have attached comments summarizing the status of the Bear Lodge meadow jumping mouse as Appendix E and request these comments be reviewed for the purposes of ensuring the Phase II Amendment adequately protects wetland and riparian habitat and adequately analyzes and assesses impacts to riparian and wetland habitat.<br><br>The FEIS therefore entirely fails to adequately analyze and assess the impacts of riparian and wetland habitat loss and degradation. The FEIS seems to assume that current conditions are not negatively impacting native species or their habitats, which is entirely inappropriate. Adding to this is that there are no specific Standards proposed through the Phase II Amendment that requires any level of riparian and wetland habitat restoration and that actually prohibits degradation of riparian habitat. In fact, the Phase II Amendment explicitly allows domestic livestock grazing, logging, road building, and mining in riparian habitats, regardless of the impacts. This does not serve to ensure the viability of native species and their habitats. | *Scientific information on the status and trend of the Bear Lodge meadow jumping mouse on the Black Hills was incorporated, as appropriate, into the Phase II FEIS. Taxonomic issues and actions to list this species under the Endangered Species Act are outside the scope of the Phase II Amendment.*<br><br>*There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.*<br><br>*The level or riparian and wetland restoration is a desired condition that is better defined by Forest Plan Objectives versus Standards. Objectives 213, 214, and 215 define these levels in the Phase II Amendment. Standards 1301, 1302, 1304, 1305 and 1306 are specifically identified to protect riparian areas, water influence zones and wetlands. Additional Standards that limit management activities (e.g., travel management/roads, grazing, and mining) are also included.* |
| Comment 21-65: **Water Quality, Failure to Demonstrate Effectiveness of BMPs, Compliance with Clean Water Act and State Water Quality Rules**<br><br>The FEIS asserts that water quality will be protected through implementation of Best Management Practices ("BMPs") and Watershed Conservation Practices, yet there is no analysis or information provide to support this assertion. Of particular concern is that such measures are inadequate to protect native fish populations, such as those of the lake chub and mountain sucker. Indeed, BMPs and Watershed Conservation Practices do not expressly limit the influx of sediment into streams, do not limit road construction and off-road vehicle use within streams, and do not prohibit logging, domestic livestock grazing, or mining within aquatic habitats that may support populations of mountain sucker, lake chub, or finescale dace. The fact that mountain sucker and lake chub populations have declined (the lake chub precipitously) raises serious concerns that BMPs and Watershed Conservation Practices are indeed worthless in protecting these species and their habitats. Similarly, American dipper declines in the Black Hills are linked to water quality | *An assessment of BMP effectiveness was completed in 2003. The findings of this evaluation are disclosed on page 3-457 of the Phase II FEIS. Forest Plan standards and guidelines provide protections to aquatic resources in combination with BMPs and watershed conservation practices. Extensive development occurred in the Black Hills following the discovery of gold in 1874. It is inaccurate to compare the current state of aquatic species to the effectiveness of regional watershed conxervation practices wince the original regional watershed conservation practices were only adopted in December 1996 and BMPs originated under the authority of the Clean Water Act (1977). Ecological changes on the land often are slow to appear and problems created over many decades may take years of effective management to correct.*<br><br>*There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.* |

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| problems (Backlund 2001). The presence or absence of American dipper has been shown to be a reliable indicator of water quality (Feck and Hall 2004), thus its decline should be a strong indication that existing BMPs and WCPs are not adequately protecting aquatic habitats. We have attached our petition to list the Black Hills population of American dipper under the Endangered Species Act to these comments as Appendix F and request that the information presented be reviewed to objectively determine whether BMPs and WCPs adequately protect the dipper and its habitat.<br><br>Furthermore, the USFS has not put forth any information or analysis showing BMPs to be effective when activities are undertaken on steep slopes, in areas with high mass wasting potentials, in areas that have experienced landslides, in recently burned areas, in areas that are already experiencing erosion, or in protecting streams listed under state 303(d) lists (i.e., the impaired list). Such condition are found in the BHNF. Thus, their blanket effectiveness is not only questionable, but is simply unsupported. It is difficult, if not impossible, to understand how their implementation will ensure protection of native fish populations and their habitat and will ensure compliance with state and federal water quality standards. | |
| In addition, the impacts of mining-related water pollution to fish and wildlife is entirely overlooked in the cumulative impacts discussions. May et al. (2001) and other studies have found that mining-related pollution is a significant problem in the Spearfish Creek, Whitewood Creek, and Bear Butte Creek drainages. May et al. (2001) specifically state:<br><br>Analysis of water and sediment from Spearfish Creek, Whitewood Creek, and to a lesser extent Bear Butte Creek indicated contamination from various elements associated with gold mining operations in the Black Hills when compared to reference sites. (p. 8).<br><br>The authors report, "Concentrations of numerous elements in sediment (As, Cd, Cu, Hg, Ni, Pb, Zn) were found to exceed EPA [Environmental Protection Agency] ET [ecotox thresholds], indicating the possibility of adverse ecological affects" (Id.). Clearly, the cumulative effects of mining-related water pollution are relevant, especially in the context of maintaining populations of fish and wildlife within these drainages. | *The significance of impacts to native fish are disclosed in the Aquatic Ecosystem section and individual fish species discussions in the Phase II FEIS and Appendix C (BABE). The FEIS analyzes the effects of implementing Forest Plan standards and guidelines, watershed conservation practices and Best Management Practices that are based on research and current practices that conserve or enhance aquatic habitat to ensure native fish species viability. The effects of non-native fish on native fish are disclosed in the Phase II FEIS, Appendix C, pp. 172, 176, and 181.*<br><br>*A discussion of the effects of past, present and reasonably foreseeable mining activities is found in the Aquatic Ecosystems cumulative effects section in the Phase II FEIS.* |
| Comment 21-66: **The Phase II Amendment Lacks a Legally Sufficient Monitoring Plan** | *Chapter 4 of the amended Forest Plan addresses monitoring. Species specific protocols are in the Forest Plan Monitoring Implementation Guide.* |

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| We can find no monitoring plan prescribed under the Phase II Amendment. Thus, we are unclear as to how the USFS proposes to ensure its meets its goals, objectives, standards, and guidelines.<br><br>Of particular concern is that the Phase II Amendment does not provide for the monitoring of population trends of MIS, which is required by 36 CFR § 219.19(a)(6). In his appeal decision, the Chief specifically chastised the USFS for failing to provide for adequate MIS monitoring, stating:<br><br>The Monitoring and Evaluation Strategy in the Revised Plan (Chapter 4) and the Monitoring Implementation Guide for the Plan (Vol. 84, pp. 1166-1222) are not species-specific for any MIS. With no quantified goals and objectives for many MIS and sensitive species or their habitat, and with unclear or un-documented monitoring objectives, it will be difficult to understand the meaning of any monitoring results. A significant purpose of Forest Plan monitoring is to help determine effectiveness of management strategies and to identify needed changes. (p. 51)<br><br>The Phase II Amendment must provide for the monitoring of population trends of MIS as required by the Chief and as required by regulation. | *Monitoring of MIS is discussed in the Monitoring Approach section of individual MIS discussions on pages 3-224 to 3-299 of the Phase II FEIS. Monitoring strategy is shown in Chapter 4 of the amended Forest Plan. More specific protocols are found in the Forest Plan Monitoring Implementation Guide.* |
| <u>Comment 21-67</u>: **The Phase II Amendment Calls for Unsustainable Logging**<br><br>It is indefensible for the USFS to claim that sustainability is beyond the scope of the Phase II Amendment because all information indicates logging is currently unsustainable on the BHNF.<br><br>Indeed, the allowable sale quantity ("ASQ") and sustained yield rate were calculated based on a suitable timber base that existed in 1997. This was before the Jasper Fire, Grizzly Gulch Fire, Elk Mountain Fires I and II, Battle Creek Fire, Roger's Shack Fire, Red Point Fire, and any other fires that occurred after 1997. As a result of these fires, the actual amount of timber available for harvest has decreased significantly. The loss of suitable timber, while not calculated in either the FEIS or anywhere else that we know of, must be around 10% or more. Although burned areas are still included in the suitable timber base, in reality, they support no timber. Thus, they cannot possibly contribute to the suitable timber base, yet the USFS is logging the BHNF | *The Phase II Amendment did not analyze ASQ or long-term sustained yield. That work was done in the analysis for the 1997 Revised Forest Plan, and was not the subject of the Phase II Amendment.* |

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| as if they do.<br><br>Therefore, proportionally, the USFS is actually logging more wood from the BHNF than ever before. Although the ASQ and sustained yield may be the same, because the number of trees on the BHNF landscape have decreased, they are, in essence, leading to higher yields. In other words, the USFS is logging at an unsustainable rate on the BHNF. | |
| Comment 21-68: The DEIS claims that the proposed treatments would reduce the potential for wildfire or insect infestation and provide a healthy forested ecosystem. We request that the USFS provide appropriate analysis and scientific documentation to support its claim that a forest without wildfire and insect infestation is a healthy ecosystem. | *The Citadel project does not propose to eliminate wildfire or insect infestations within the project area. That would not be either possible or desired.* |
| Comment 21-69: The Citadel timber sale was developed and the DEIS prepared under the 2005 NFMA planning rule and it is therefore invalid. The forest plan was developed under the 1982 planning rules and all projects must be in conformance with the plan and the 1982 rules. Second, the 2005 NFMA planning rule was declared invalid by the U.S. District Court for the Northern District of California on March 30, 2007. The 1982 planning rules will continue to apply to all projects implemented under the 1997 Revised LRMP. | *The decision on this project will be consistent with the requirements of NFMA and the Forest Plan.* |
| Comment 21-70: The DEIS discloses no analysis or assessment was made with regard to environmental justice in accordance with Executive Order 12898 and Department of Agriculture Regulation DR5600-2. It is difficult to imagine that a project of this scope, intensity and duration will have no adverse effects to minorities or low income populations, especially when American Indians are the largest minority population within the Black Hills. We request that the USFS undertake a serious assessment of impacts to American Indians and other minority and low income populations. For example, what will be the economic impacts, the impacts to sacred and religious sites, the impacts to aesthetic resources, the impacts to access of special places sought out for solitude, the cumulative impacts of past, proposed, and reasonably foreseeable future projects, the impacts to hunting and fishing, the impacts to collection of sacred plants, etc. Where is the discussion of these and other direct and indirect impacts? | *Refer to the discussion on Heritage resources pages 3-12 through 3-134 of the Citadel DEIS.*<br><br>*Also refer to Section 3.8 of the DEIS – Unavoidable Adverse Effects.* |

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| Comment 21-71: We are disappointed with the inadequacy of the DEIS and its failure to address many of the issues which we raised in our scoping comments. We hope the USFS will take a hard look at the significant impacts to the environment and chose a different path with regard to the proposed Citadel timber sale and set a new—and very much needed—standard for ecosystem management on the BHNF that meets the needs of ALL forest resources. We support an alternative which does not undertake any logging, thinning, or other vegetation management. We request that the USFS undertake road decommissioning and closure throughout the Citadel timber sale area. | *Biodiversity Conservation Alliance did not submit a scoping letter for the Citadel project.*<br><br>*Alternative A (No-Action) would not implement any logging, thinning or other vegetation management. Both action alternatives would implement road closures.* |