

APPENDIX F: RESPONSE TO PUBLIC COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

Letter Number	Name of Commenter	Group, Agency, Tribe or office represented
1	b.sachau	
2	Ardell and Marge Nelson	
3	Janet Oertly	Natural Resource Conservation Service
4	Gary Hansen	
5	Dave Keffeler	
6	Robert Stewart	Department of the Interior
7	Shelly Deisch	South Dakota Game, Fish and Parks
8	Aaron Everett	Black Hills Forest Resource Association
9	Larry Svoboda	US Environmental Protection Agency
10	Elaine Whittlesy	
11	Jeremy Nichols	Biodiversity Conservation Alliance

Letter and Comment Number	Public Comment	Agency Response
1-a	I oppose this plan. I believe the few bugs that are natural are being used to do commercial logging so that local lumber companies make money. I think this is a political decision, and not a scientific one at all. I also think the local profiteers probably imported the bugs to try to create a rationale for destruction of trees.	Your opposition is noted.
1-b	Trees soak up excess carbon dioxide. In these days of global warming caused by excess carbon dioxide, it is clear that cutting them hurts all americans	Global warming is outside the scope of this project
1-c	These bugs have been in this area for years. But the local profiteers are getting stronger and stronger politically and want to attack this nationally owned land which has been paid for by national taxpayers for eons.	Comment noted

1-d	I also object to the focus on ‘big game’ – growing them so human gun nuts can shoot for their ‘fun’. Those animals are God’s creatures and deserve life simply for themselves. They do not exist so that perverted human beings with a sadistic need for violence and killing are catered to. They should not be grown simply to serve as live targets. This is perverted and sadistic. Does anybody there realize this is not 1860 anymore.	Comment noted
1-e	The public is NOT demanding that these trees be cut at all. This is a national area and I believe you do not have one national taxpayer demanding that, except a profiteer. All profiteers who expect to financially profit from plans of these national areas should be identified in the records as potential profiteers. They should not hide under anonymity.	Please refer to other comments provided in this appendix to view public input on this project. Additional public input was provided during the scoping period and those letters and responses are available in the project file.
1-f	The healthy forest act is crap, and is in fact a scam on the American people. Bush and his minions have been embarked on environmental destruction since they took office. The only people he has appointed to office are known as environmental destroyers.	Comment noted
1-g	All grazing should be stopped in this area	Grazing allotment management is outside the scope of this project.
1-h	I note extremely old bibliography sources of information being used. I wonder why such old material is being used and think it is so obsolete it should be thrown out.	The cited material was used by the resource specialists. These specialists determined what information was important to completing their respective analyses. There is no arbitrary time limitation on the usefulness of available information.
2	We own land in the Bugtown Gulch project area, and we wish to convey our agreement and strong support for Alternative 2	Thank you for your support of Alternative 2
3-a	The NRCS supports the US Forest Service selection of Alternative 2 as the preferred alternatives to effectively address and manage the identified resource concerns.	Thank you for your support of Alternative 2
3-b	The NRCS would advise the USFS to consult with the local NRCS and Farm Service Agency offices regarding any USDA easements or contracts in the project area that may be affected, and/or any project effects impacting adjacent landowner’s USDA program eligibility.	The local NRCS office has been consulted and there are no such easements or contracts in the project area.
4-a	I am opposed to the extensive and intensive, preventative thinning taking place in the Black Hills National Forest.	Your opposition is noted.
4-b	I support more aggressively removing dead trees and infested trees only, not the thinning of healthy trees.	Your support for sanitation of actively infested green trees and salvage of dead trees is noted.
4-c	In regard to the 300 foot fuels breaks where deferred sites are adjacent to private lands, aren’t the adjacent land owners going to have a say in that? They should.	There have been numerous opportunities for public input on this project, including the notice and comment period on the Draft EIS to which you have responded.
4-d	Thinning is being pushed as necessary for the health of the forest and prevention of fires, I don’t but it. More man power and earlier response to fires without inter-agency confusion would probably be more effective in controlling fires than thinning. Keep in mind, the Black Hills had fires and	Yes, thinning of dense stands of ponderosa pine is a management method which can reduce the potential for mountain pine beetle mortality in ponderosa pine stands. Susceptibility of stands to beetle attack is related to average stand diameter and density. Refer to ‘Hazard Ratings and Susceptibility’ in the

	beetles before the Forest Service ever existed and the forest is still here.	Entomology section of Chapter 3 for more information. Thinning is also a management method used to reduce potential fire behavior—not to prevent fires from starting. Refer to the Fire and Fuels section of Chapter 3 for more information on the impact of thinning in relation to fire behavior. None of the proposed actions attempts to eliminate beetles or fires from the Black Hills.
5-a	As a landowner I endorse Alternative 2 as the rational choice to protect property and its value.	Your endorsement is noted.
5-b	As a user I most enjoy the thick natural forest and plan many trips in the slash free and stump free areas around my property. So, alternatives 2 or 3 is the rational choice of the three evils.	Comment noted
5-c	I very strongly object to the management practices prescribed for the Goshawk Nesting Habitat and attached PFA. Allowing 600 acres of forest adjacent to my property to be decimated and left as a fire hazard for the sake of a shrine to an abandoned Goshawk nest seems a departure from the logic and reason used to prepare the rest of the document. The very aggressive beetles are going to degrade/destroy the forest so that it will be undesirable as a nest by your own standards of forest structure acceptability.	Alternatives 2 and 3 would defer treatment in 197 acres of nesting habitat around the Sourdough territory and 190 acres in the French creek territory. However, active management in the form of variable density commercial thinning (VDCT) and/or sanitation is proposed within the surrounding PFAs (approximately 420 acres each). The Sourdough nest area in the northern portion of the project area, and the one you refer to, is experiencing heavy beetle mortality at this time.
5-d	At great personal expense, I have thinned all 100 acres of trees on my property and can report that in the last season I could not find a new pitch tube. Some reassurance that sunlight, added moisture, and tree health can stunt the epidemic.	Comment noted and considered.
5-e	If the power that be can not agree, then spray this select area.	Spraying is very expensive because it requires application to occur on individual trees. This cannot be done from the air, so it must be performed using ground based equipment. Also, spraying is only effective in protecting uninfested trees and does nothing to curb beetle populations. Therefore, spraying is not considered in this area.
5-f	Protect an alternative area, the east side of 030604 especially 12, 18, 17, 15 and 16. have the specified tree structure, are on a similar north south ridge, at the same elevation, with water.	Forest Plan standard 3108 requires that historically active goshawk nest stands be excluded from the project. There is a historically active nest (active in 2005) in the Sourdough Territory and this acreage must be deferred from treatment. Protected nest acreage of 180 acres must be within ½ mile of the nest (FP Standard 3109). Preferred configuration of protected nesting habitat is surrounding the nest stand.
5-g	Restrict logging to winter and ATVs entirely or to the road.	Restricting logging to winter would not allow for timely removal of infested trees prior to bug flight. Restriction of ATV, or travel management, is not part of this project.
5-h	At least provide the documentation for cleaning up the mess after the opposing voice decides the nest is abandoned permanently. Something has	Expected fuels/slash treatments are shown in Map 17 in Appendix A.

	to be done with what will be 600 acres of dense dry fuels near the top of a mountain.	
5-i	I find fault with the lop and scatter fuel treatment technique because elk and deer won't go in it; my horse gets cut up in slash and can not go along quietly in it; it makes a great bungee stick barrier for ATVs; least desirable ascetic value of all the practices.	Refer to Map 17 in Appendix A. Lop and scatter is generally proposed where slope or soil restrictions exists.
5-j	Thank you in advance for the careful consideration that I know you will give my comments. My hope is that I have presented new data and a new actively involved interest to consider. This is a very important matter to me that directly affects the property's resale and recreational value.	Thanks you for your comments. They have all been considered in this analysis.
6	The Department of the Interior has reviewed the Draft (EIS) and has no comments.	Thank you for your review and response
7-a	First of all, SD Department of Game, Fish and Parks (SDGFP) wishes to thank Kelly Honors and Pat Hudson for contacting our agency regarding this project and for spending considerable time answering some of our questions. Please note that SDGFP submit limited comments on the above-referenced matter. We restrict our comments to the proposed Alt. 2 and offer suggestions to better incorporate considerations for cavity dependent species.	Thank you for your review and response
7-b	Page 12: Goshawk PFAs. The second PFA has about 18 acres not classified as late succession. Is that to say that 18 acres are a contiguous stand? Will the largest diameter trees be retained within those 18 acres? Why or why not.	Page 12 of the DEIS erroneously stated that 399 acres of the French Creek PFA is also designated for late succession management. There are 399 acres of sites designated for late succession management within the nest area and PFA combined. There are 209 acres of sites designated for late succession in the French creek PFA. This information has been added to the Final EIS. The largest diameter trees will be retained if they are not actively infested with beetles.
7-c	The second selected goshawk PFA and the late successional acres of 494 are essentially one and the same?	No, there is some overlap, but not the entire PFA is designated for late succession management. Please refer to maps 5 and 6 in Appendix A, as well as the response to comment 7-b above.
7-d	Post Sale Projects. Assume all are "KV" projects and therefore, there is some time to discuss project need, design and implementation?	These projects may or may not be funded with KV funds. They are, however, scheduled to occur following any potential timber sale treatments that may be approved for this project.
7-e	We respectfully ask the Forest Fisheries Biologist and the project Hydrologist to contact Ron Koth and Shelly Deisch of the SDGFP to better explain the conceptual design and exact location of the two proposed riparian habitat improvement projects. We would like to see the area and design plans well in advance of implementation. Types of questions we have include, but are not limited to: How did the stream channel become incised? How deep is the incision? How do these proposed dams and barriers impact fish and aquatic life passage?	Before project implementation, field review and input from Forest Service specialists and SDGFP will be sought to come up with a final design. Source of the incised channel is not readily obvious, but may be related to past mining. Incision depth ranges from 1-4 feet along the stream. The project will allow for fish and wildlife passage as required by the Forest Plan.

7-f	What is the elk fence for and what is the design? Is the fence to exclude elk or allow passage? For elk passage, please contact Dennie Mann or Chad Sebade at the SDGFP for elk fence design specs for an incredibly effective cable that is installed as the top wire of a fence (rather than barbed wire).	This is actually a range pasture fence which would incorporate wire cable on the top, as you have suggested.
7-g	We support protection of springs and riparian areas. However, with spring developments, we ask that close coordination be conducted with Forest Fisheries Biologist, District Biologist, Botanist and Hydrologist to not further impact unique aquatic communities or dry out the site.	We agree that interdisciplinary coordination is essential to insure resources are adequately protected.
7-h	Page 13: Repair riparian enclosure. What is being excluded and what is allowed to pass through? Again, if allowing elk in the area, please consider a potential need to install cable as top wire.	The purpose of this enclosure fence is to exclude livestock. This fence originally protected a seep area, some willow vegetation, and provided a comparison for stream monitoring of livestock use. The design will either be a 4-wire livestock fence design, using cable for the top wire to reduce fence damage by elk, or a buck-rail (wooden) fence, depending on costs. More information on this project is available in the wildlife specialist report.
7-i	Maintaining large diameter trees. We do not understand the reasoning in the DEIS which contends that large tree retention requirements of HFRA do not apply to commercial thinning or sanitation projects. Therefore, what is the consideration for retaining large (16+” dbh) diameter pine (we understand fuel treatments do not cut large diameter pine) within Alternative 2 for sanitation, commercial thinning and salvage?	The HFRA specifically excludes projects authorized under section 102(a)(4), such as Bugtown Gulch, from the old growth and large tree retention requirements. Refer to Section 102 (e)(1)(B) of the Act.
7-j	SDGFP supports implementation of variable density thinning but ask why it was only applied to goshawk PFA of 412 acres? Certainly within the 13,378 acres there could be more than only 3% of the treatment area that will have variable density trees on a meaningful landscape level? Page 21 gives FS justification for not incorporating VDT or varying BA’s between 40 and 60 BA. DEIS says 40 to 60 doesn’t provide dense cover areas. We agree but that doesn’t answer the question of why FS could not implement variation in the lower BA cuts. Why not allow for landscape variation of 40 to 80 BA in some cutting units?	Varying leave basal areas in the project area from 40-80 was not a suggested alternatives and therefore not specifically considered in the DEIS. An 80 basal area would leave stands more susceptible to beetles. Alternative 3 was developed specifically to provide for additional diversity across the project area.
7-k	Support commercial thinning to 40 BA if there is implementation of size-diameter limit cuts of pine 16+” dbh and incorporation of more variable density thinning. As proposed, will the 40 BA be primarily a monoculture of similar sized pine (9-12”), evenly spaced like a park? If variable density thinning and POL thinning occur within the same stands, that would allow for some diversity in residual pine diameters.	The proposed commercial thinning will be a ‘low thinning’ where generally the largest and best formed trees are retained while the smaller commercial trees are removed. This point of clarification has been added to the Final EIS in the description of treatments in Chapter 2. Under this approach there would likely be some cutting of 16”+ dbh trees, but that would be the exception and would occur where numerous 16”+ dbh trees currently exist. Additional information on the availability of 16” diameter trees has been added to the silviculture section of this EIS. In addition to protecting stands, and individual trees, from beetle mortality and wildfire, thinning will encourage growth of residual trees as they are released from competition. Therefore, the proposed actions would be

		<p>most likely to result in retention of large diameter pine on the landscape as well as development of large diameter pine in the future.</p> <p>Design criteria for this project includes retention of 5-8 of the largest green trees available per acre (see Appendix B). This approach was used rather than setting a strict diameter limit because the larger trees are not uniformly spread across the landscape.</p> <p>All alternatives meet Forest Plan direction for snags.</p>
7-l	While there are many helpful maps, we did not find a vegetation treatment map in DEIS and that would have been helpful to offer better comments and support.	Maps 5 and 6 in Appendix A show where proposed treatments would occur.
7-m	Because the FS definition of salvage is for commercial utility of beetle-killed trees and reduce fuel loading, again – why only retain 4 large snags/acre when retaining large trees is a future commercial consideration as well as a current wildlife and vegetation diversity consideration?	Design criteria for this project includes retention of all existing snags greater than 18’ dbh, unless they are a safety hazard and retention of at least 4 snags per acre in the largest size class available, in salvage harvest units. Clarification that this criteria is for salvage harvest units has been added to the FEIS. In non-salvage harvest units, snags would only be cut where they are a safety hazard. Salvage treatments are only proposed for 250 acres total. This is approximately 2% of the area. Given the extensive beetle caused mortality in the project area which is continuing, there will be more than ample to snags to meet Forest Plan direction. Refer to the snag discussion in the Wildlife Section of Chapter 3.
7-n	SDGFP apologizes if we don’t have a clear picture of what large pine will or will not be sanitized, thinned or salvaged. We are defining “large” based on work by the State Cooperator’s comments in Phase II. State Cooperators (which included SDGFP) reviewed BHNF quadratic mean diameter data, brown creeper literature and more recent literature on BHNF snags and cavity tree species’ needs. SDGFP and the State Cooperator’s suggested “large” pine as 16 inches or larger dbh in the Phase II commenting process. More recent data from Spiering (2005) indicates an alarming rarity of large snags on BHNF. BHNF currently tracks pine data primarily by stand QMD data with individual tree data associated more with site specific projects. SDGFP graphed the BHNF QMD data and found 13” and above are a small percentage of the average stand diameters and 16”+ QMD stands nearly fell off the graph, compared to 13” and less QMD. What concerns SDGFP is that QMD does not tell the observer if trees in that stand are actually large in diameter, or if there is a sprinkling of large trees surrounded by a sea of small tree diameters. The two types of possibilities can be enormously different and SDGFP is very concerned that larger sized trees are not being retained or recruited based in part on what we saw with the QMD data.	<p>Based on your comments and similar ones from other commenters, the final EIS contains additional information on the availability of 16”+ dbh trees and a general description of how they are dispersed on the landscape. See the Silviculture section in Chapter 3.</p> <p>The action alternatives are more likely to allow for larger diameter pine trees to develop within the project area than no action. This is because of the lower risk of beetle caused mortality which would result from proposed treatments.</p> <p>Refer also to the response to comment 7-k above.</p>
7-o	Also, SDGFP asks how the FS will define “snag” when trees are currently	The trees which are currently infested with beetles are going to die. The leaves

	<p>dying and have nearly no chance of recovery. Are bug hit trees in the dying stage considered green or a snag? From the time a tree is inventoried, marked and then cut, the life stage of that tree can be very different. It could be live now but dead when the saw hits it. We ask the FS to define live, green and snag for the purposes of this project. We fear too many large trees will be removed, regardless of their life stage (live, dying or dead).</p>	<p>will turn brown the following summer. These actively infested green trees are not considered snags for the purpose of the snag analysis completed for this report or relative to any design criteria.</p> <p>Sanitation treatments will remove actively infested green trees only. Therefore, this will depend somewhat on timing of harvest relative to beetle flight. The purpose is to physically remove beetles from the area.</p>
7-p	<p>Based on FS definition of snag or green tree retention, we do not understand why snags of 18” would be retained and green tree of 20”. Where did those diameter recommendations come from? SDGFP suggests that the analysis on green, dying and dead tree retention better consider new local science and start looking at 16” and above dbh pine.</p>	<p>Forest Plan Standards 2301 a&b discuss retaining 20” or greater snags. 18” was selected because few large snags currently occur. For green trees 20” is listed in FP Guideline 2306 (recruitment trees).</p>
7-q	<p>We explain some wildlife habitat and vegetation diversity needs to better consider reducing (to 16+ in) the size-diameter limits for snags (18+ in) and green trees (20+ in) in light of the absence of large diameter pine (live, dying or dead) in this project area and across the forest, plus we offer new scientific information. Based on Vierling’s work, SDGFP will limit discussion of woodpecker habitat to Lewis’s, a Region 2 Sensitive Species.</p> <p>Recent research in the Jasper Fire/salvage logged areas indicated that dbh was a significant factor influencing occupancy ($p < 0.0001$) and nest trees selected by woodpeckers (Vierling 2005). Ponderosa pine tree diameters selected by woodpeckers ranged between an average of 8.3 in. dbh for Downy Woodpeckers up to an average of 16 in. for Lewis’s Woodpeckers.</p> <p>Black-backed Woodpeckers select nest trees of approximately 8 in. dbh. Woodpeckers selected nest trees based on factors such as proximity to forage areas and other dead trees as well as cavity tree height and cavity tree dbh. Cavity tree dbh was extremely limited within salvaged sites in Jasper and yet was significantly important in nest tree selection. In other words, the birds only had a limited range of dbh’s to choose from following years of green tree management and fire salvaged trees.</p> <p>Vierling reported that very few Lewis’s Woodpeckers were found within the study sites and this may be due to a lack of suitable nest trees as well as surrounding habitat characteristics. Lewis’s Woodpeckers prefer nesting in large, dead/decaying trees. Vierling (1997) noted that the average dbh for Lewis’s Woodpeckers nesting in cottonwood riparian habitats in Colorado was 44 in. and Saab et al. (2001) noted that the dbh for Lewis’s nesting in Idaho pine forests averaged 18.7 in. Nest trees alone might be the limiting</p>	<p>Thank you for your explanation.</p> <p>All MIS species are discussed in the FEIS, including the black-backed woodpecker. Evaluation of effects of the alternatives to R2 Sensitive Species, including the black-backed and Lewis’ woodpeckers, is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in Appendix D of the EIS.</p> <p>Refer to responses to comments 7-k and 7-n in regard to large diameter trees and their retention and development in the project area.</p> <p>The Bugtown Biological Evaluation discusses Lewis’ woodpecker. The project area does not currently provide anything more than marginal habitat for this species (Anderson, 2003). The project area is still a moderate to dense ponderosa pine forest type. The Jasper fire created additional nesting and foraging opportunities for this species. A large beetle epidemic or large scale wildfire within the project area could also improve habitat for this species. The project as proposed would neither increase nor decrease habitat for this species. The risk to individuals nesting on the perimeter of the Jasper burn from project activities is remote.</p>

	<p>factor for Lewis’s Woodpecker nesting activities in the Jasper Fire and salvage area because the average tree dbh for randomly selected trees (which would represent average forest conditions within the study sites) averaged approx. 8 in. The largest dbh Vierling measured on random trees was 19.7 in. and only 4 of the 151 random trees were large enough to potentially function as a Lewi’s nest tree.</p>	
7-r	<p>Vierling reports that Black-backed Woodpeckers and Lewis’s Woodpeckers are both species of special interest for a variety of federal and state agencies, and habitat requirements for these species are very different. For instance, Black-backed Woodpeckers tend to prefer sites with a greater number of snags surrounding the nest tree while Lewis’s Woodpeckers prefer more open forested habitats with large snags in which to nest. Lewis’s Woodpeckers are aerial flycatchers and thus require generally open areas in which to forage.</p>	<p>All MIS species are discussed in the FEIS, including the black-backed woodpecker. Evaluation of effects of the alternatives to R2 Sensitive Species, including the black-backed and Lewis’ woodpeckers, is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in Appendix D of the EIS.</p> <p>Refer to responses to comment 7-q.</p>
7-s	<p>SDGFP does not know the actual pine diameters (not to be confused with QMD) within the Bugtown Gulch project area and suspects that very few large trees exist if stand conditions are at all similar to pre-fire and post-salvage conditions within Jasper. Maps provided with the Bugtown DEIS indicate the area has been historically heavily managed and logged. SDGFP suggests that reducing pine stands to 40 BA may benefit or at least not significantly impact Lewis’s IF the largest diameter trees (live and dying) and snags (dead) are retained and if a diversity of understory plants are enhanced with more ground sunlight to provide an insect prey base.</p>	<p>The largest diameter trees would generally be retained in the commercial thinning areas.</p> <p>Refer to responses to comments 7-k and 7-n regarding large green trees in the project area.</p> <p>All actively infested green trees would be removed in a sanitation, regardless of dbh. The purpose of this treatment is to physically remove beetles from the project area and ultimately to reduce larges scale tree mortality.</p>
7-t	<p>However, in selecting large (16+’ dbh) diameter trees and snags, SDGFP asks that the FS retain most large trees over and above the 4 snags/acre because Vierling found that woodpecker nest sites have a higher snag density as compared to random sites. Vierling suggested that woodpeckers as a group are choosing clumps of snags as compared to snags that are evenly distributed in the landscape. Literature on the brown creeper also suggests that for a bird to “grocery shop”, it is better from a energy expenditure level to glean or catch bugs within a clump of large diameter trees compared to more energy expended to glean smaller diameter trees surrounding the nest tree. Therefore, SDGFP recommends that retention and distribution of large diameter (≥ 16” dbh) trees (dead and dying) and snags within a logged area should be considered above and beyond what is proposed in Alternative 2.</p>	<p>The largest diameter trees would generally be retained in the commercial thinning areas.</p> <p>Refer to responses to comments 7-k and 7-n regarding large green trees in the project area.</p> <p>All actively infested green trees would be removed in a sanitation, regardless of their dbh. The purpose of this treatment is to physically remove beetles from the project area and ultimately to reduce larges scale tree mortality.</p>
7-u	<p>Further, Spiering et al. (2005) reported that small diameter snags (9 in. or less dbh) greatly outnumbered larger diameter snags (19+ in dbh) by 81.3%. Large snags were rare in their study areas and they concluded that this may limit the quality of habitat for cavity-nesting birds in managed ponderosa pine stands. Retention of live trees at 20” as proposed by Alt. 2 (rather than</p>	<p>The 20” dbh tree retention design criteria was developed to insure that where trees of this size occur, at least 1 per acre will be maintained.</p> <p>The largest diameter trees would generally be retained in the commercial thinning areas.</p>

	dropping the size limit to 16" dbh) does absolutely nothing to recruit large diameter trees and only exacerbates the loss of larger diameter trees on the forest and within this project area.	<p>Refer to responses to comments 7-k and 7-n regarding large green trees in the project area.</p> <p>All actively infested green trees would be removed in a sanitation, regardless of their dbh. The purpose of this treatment is to physically remove beetles from the project area and ultimately to reduce widespread tree mortality.</p>
7-v	Both Vierling (2005) and Spiering et al. (2005) suggest that birds that prefer larger diameter cavity trees are limited in nest tree selection since most managed pine stands probably have too small of diameter trees. Therefore, SDGFP asks the FS to defend or explain why most large diameter trees (16+ in dbh of dead, dying or live) will not be retained in all treatment areas of Bugtown Gulch regardless of the current guidelines.	<p>The converse is true in that most larger diameter green trees will be retained. Refer to responses 7-k and 7-n.</p> <p>All actively infested green trees would be removed in a sanitation, regardless of their dbh. The purpose of this treatment is to physically remove beetles from the project area and ultimately to reduce widespread tree mortality. A diameter limit on infested trees would result in those beetles remaining on site. Given the extent of this epidemic and the threat which it poses to resources, all infested trees are proposed for removal.</p> <p>The design criteria states a <u>minimum</u> of 4 snags/acre would be retained in harvest units. The only snags proposed for cutting are those in salvage treatments. Salvage is only proposed for 250 acres total. This is approximately 2% of the area. Given the extensive beetle caused mortality in the project area which is continuing, there will be more than ample to snags to meet Forest Plan direction and large diameter snags will remain outside of the salvaged areas.</p> <p>The proposed thinning and sanitation treatments will improve the potential for large diameter trees to develop in the project area by reducing the potential for loss to beetle mortality.</p>
7-w	SDGFP recognizes the inherent flaws in Habcap and the coefficients and worked with BHNF and SAIC on the Phase II changes to deer and elk habitat needs. SDGFP and WYGF wrote many of the deer and elk habitat management recommendations in SAIC (2003). We defer to that document regarding our comments on deer and elk habitat. We do not object to a significant forest plan amendment.	This document has been reviewed and considered by the wildlife biologist and is part of the project file.
7-x	SDGFP cannot support the proposed Alt. 2 as written without better consideration for retaining and recruitment of larger diameter pine in the live, dying and dead life stages. We define large as 16" and greater dbh based on the cited literature and additional offered information. As we have interpreted this DEIS, it appears that the few large trees on the landscape will not be best considered and that the FS's interpretation of HFRA allows for cutting of large trees. SDGFP offered comments on the draft HFRA through	<p>Thank you for providing the cited literature.</p> <p>As discussed under responses to comments 7-k through 7-v above, the action alternatives would generally retain larger diameter green and dead pine.</p> <p>HFRA does allow the cutting of large trees in projects authorized under Section 102(a)(4), which include this project. Refer to response to comment 7-i.</p>

	<p>Congressional request and it was clear our agency never intended Healthy Forests to have significant losses of larger diameter trees whether they were dead, dying or live. SDGFP perhaps doesn't fully understand the DEIS proposal on large tree considerations and how they will be applied to this project and would be willing to discuss this concern.</p>	<p>Because there is confusion as to how this project will impact larger trees, clarification of this point has been added to the Final EIS.</p>
8-a	<p>We are writing in response to the District's request for comments on the Bugtown Gulch Draft Environmental Impact Statement under the Healthy Forests Restoration Act. We appreciate this opportunity to comment, and hope you find our input helpful. We also commend the District as the first on the Black Hills National Forest to undertake a project under the Healthy Forest Restoration Act authority.</p>	<p>Comment noted</p>
8-b	<p>We concur with the District's assessment of Purpose and Need and its categorization of this project area as experiencing "a significant threat to an ecosystem component, or forest resource" from an ongoing insect epidemic pursuant to HFRA Sec. 102(a)(4). BHFRA staff and members have personally visited the project area many times, including the District's public collaboration field trip in November, 2004. The project area is undergoing massive losses of mature forest due to mountain pine beetles, and critical resource and ecological values may be lost without management intervention. Timber stands within the project area are overstocked to varying degrees; insect mortality is most pronounced in the densest areas, and is progressing outward at breakneck pace.</p>	<p>Comment noted</p>
8-c	<p>We also support the exclusion of travel management from the decision to be made. In terms of implementing the Forest Plan under an authorized HFRA project framework, travel management is outside the scope of the decision.</p>	<p>Comment noted</p>
8-d	<p>We support the implementation of Alternative 2, with modifications as described below. Based on the analysis provided, professional experience, and field review of the project area, we believe the proposed treatments in Alt. 2 provide the best chance to halt the progression of the mountain pine beetle epidemic in the project area. As the effects analysis notes, nearly all aspects of the environment are affected by the dramatic changes to forest structure currently taking place in the project area. The best way to protect resources, provide for a diversity of wildlife, and protect private property over the long-term is to prevent further degradation of</p>	<p>(comment is copied verbatim) Your support of Alternative 2 is noted</p>
8-e	<p>The analysis of soil effects (p. 28) mentions a site on soil type SyaC showing wheel track evidence and less herbaceous cover than surrounding areas. The discussion should clarify that post-sale maintenance and rehabilitation should have addressed this problem. The cause of these effects is not</p>	<p>(comment is copied verbatim) Areas such as this usually recover over time through the freeze thaw process or the wetting/drying process. Forest Plan Standard 1103 allows for up to 15% of a land unit to have detrimentally impacted soil. Recent information collected in 2005 from BMP monitoring showed that the units visited to check for the 15% compliance, on the Hell Canyon Ranger District, were well below the 15% level</p>

		with the maximum being 7%, averaging 3.8%.
8-f	Alternatives 2 and 3 propose treatments within the WIZ, as is mentioned on p. 35 of the analysis. The use of cut-to-length harvest systems in these units would further mitigate erosion potential, reducing it to essentially zero.	Unit layout will likely reduce actual acreage of treatments within the WIZ to much less than the 33 or so acres estimated in the EIS. The given estimate considers full sites. This clarification has been added to the FEIS. The WIZ estimates include narrow pieces of sites along perennial streams. Refer to Map 18 in Appendix A to view perennial stream reaches. The use of cut-to-length harvest systems can be used in these areas, but is not being required.
8-g	The analysis, as well as the mitigation measures in Appendix B, mention the inclusion of dry and/or frozen soil restrictions in project design. We are concerned that these measures not render the timber sales inoperable within the time frame desired by the District. Urgent removal timber sale contract provisions are readily foreseeable for portions of this project, and the District should ensure that no conflict exists between the proposed soil mitigation and expeditious removal of infested trees and thinning of surrounding areas.	Portions of thirty-two sites have Dry or Frozen design criteria applied to them as listed in Appendix B. They are soils with very high erosion hazard or high mass wasting potential on slopes from 20-40%. In general these restrictions apply to less than half the total acreage of each listed site. There are an additional 167 sites that have Compaction Design Criteria. The soils in these sites are subject to compaction when wet. To avoid compaction, activities must be limited to dry or frozen conditions, or low impact machinery---which can include operation on slash.
8-h	Tables 3.17 and 3.20 (p.73, 75) make it seem as though the action alternatives are actually increasing the acres in Fuel Model 12. The table's column labels merely say 'Post Treatment Acres Alt. X'. Are these 5-year projections of fuel model conditions, as with Alt. 1??	Yes, these are 5 year projections and that will be added to the table for clarification.
8-i	In general, we concur with the District's assessment of the Alternatives' effects on goshawk nesting and PFA habitat. The risk of nest stand loss in particular is greatly decreased in light of insect risk reduction treatments in the surrounding area. The BHFRA, in its development of The Healthy Forest Alternative to the BBNF Phase II Forest Plan Amendment, studied the effects of disturbance event propagation across the landscape under different spatial arrangements of stand susceptibility.	Comment noted
8-j	It should be noted in the analysis of effects on PFA composition according to Reynolds, that subsequent research by Graham (citation) has indicated that stands in VSS4 have essentially no pathway to move to VSS6 without disturbance through management or other means.	Disturbance is necessary in moving VSS4 stands into a VSS 6 condition. Some clarification has been added to the FEIS. See response to comment 9-u.
8-k	The analysis states (p.101), "There is no late succession habitat within the project area." However at p. 82 of analysis there are documented to be 486 acres of designated late succession, which the project proposes to exchange for other stands in the amount of 494 acres. These two statements seem incongruous.	There are 486 acres designated for late succession management, but none of these sites are in a late succession condition. See Table 3.26 for existing structural stage information.
8-l	The black-backed woodpecker portion of the MIS analysis states, "Commercial thinning would reduce the potential for future black-backed woodpecker habitat to be created," (p103) when describing effects for Alternative 2. However, the analysis at p.86 correctly points out that, "(Alternative 2) is most likely to retain sufficient green trees to provide for	The potential to retain green trees is greatest under Alternative 2. Some clarification has been added to the FEIS. Refer to responses to comments 7-k and 7-n on retention and development of large diameter trees and future snags.

	<p>replacement snags, into the future by reducing the potential for widespread beetle mortality and catastrophic wildfire.” The description of effects for Alternative 3 also seems to contradict the earlier analysis in stating that, “this alternative would be expected to provide some additional foraging habitat (more than Alt. 2), and nesting habitat for this species, now and into the future.” The future availability of foraging and nesting habitat depends on the existence of green trees from which to recruit snags. We believe the effects analysis is better served to differentiate between short-term snag recruitment under Alt. 3 (of course in consideration of the fact that the project area currently exceeds Forest Plan snag standards), versus long-term snag recruitment potential under Alt. 2.</p>	
8-m	<p>First, we support the proposed site-specific Forest Plan amendments for big-game winter and summer habitat effectiveness in MA 5.1. However, we believe the reasons behind the need for the amendment demand better explanation than is currently offered in the analysis. At the very least, the discussion beginning on p. 17 of the DEIS should say something like: “The LRMP requires the assessment of habitat effectiveness using the HABCAP model. The acreage of MA 5.4 within the project area is too small to determine an accurate HABCAP value for the action alternatives, and has consequently returned a value of 0 for deer and elk winter habitat effectiveness. In all likelihood (or in the professional opinion of the wildlife biologist), the real habitat effectiveness of MA 5.4 under Alternative 2 is greater than zero (or insert some reasonable number). However, since the Forest Plan stipulates the use of HABCAP and adherence to minimum habitat effectiveness values as calculated by HABCAP, a site-specific amendment is required to implement Alternative 2.”</p> <p>Instead, the discussion at p.17 and later in Chapter 3 repeatedly refers to the HE value for Alt. 2 in MA 5.4 as “zero.” This is simply not accurate and we encourage you to clarify the real need for the proposed amendment.</p>	<p>Clarification that this area’s habitat potential is not zero has been added to the final EIS.</p>
8-n	<p>We are, as previously mentioned, concerned about conflicts between the dry/frozen soil restrictions listed in this appendix and the ability to timely complete timber sale operations. We encourage the District to look for ways to accomplish reasonable soil protection as well as permitting urgent removal harvest to take place.</p>	<p>See response to comment 8-g</p>
8-o	<p>We are, for the same reasons, concerned about the design criteria to include “appropriate clauses to protect (snowmobile) trail and its users from harvesting activities,” and especially that, “Moving the trail temporarily to achieve sale objectives will be a last resort.” BHFRA members have a long and successful history of working with the SD GF&P and snowmobile trail</p>	<p>Discussions have already occurred with SDGFP regarding the snowmobile location. If an action alternative is implemented, the trail will be temporarily moved. The design criteria have been edited to reflect this.</p>

	users to work around winter harvest operation conflicts with trail use. We would be happy to do so yet again.	
8-p	We are, also for the same reasons, concerned that skid trail utilization is also limited to dry/frozen conditions, apparently throughout the entire project area with no apparent regard for whether such a restriction is justified based on soil type.	Your concern is noted and clarification has been added to the design criteria on use of skid trails. This will generally occur on dry or frozen conditions.
8-q	The above three issues are particularly important in light of their combined effect -- when would the District propose that harvest takes place, if it is simultaneously required and restricted during the winter season?	Comment noted.
8-r	We are curious as to the justification for retaining '5 to 8 green trees per acre of the largest size class available' in Alternatives 2 and 3. There is no mention in the analysis of the need to provide green-tree replacement snags. Quite the contrary, the analysis is quite clear that the project area currently exceeds Forest Plan snag requirements. This restriction seems arbitrary.	Refer to responses to comments 7-k, 11-uu and 11-vv. Retention of large trees is an important concern for wildlife and is recommended by the Wildlife biologist.
8-s	The mitigation stating that, "The current firewood cutting policy...will not be renewed after its explanation" appears to have absolutely nothing to do with this project. There is no reason for this to be in the design criteria or anywhere in the analysis unless the District is suggesting it is making a decision on firewood cutting as part of the Bugtown Gulch project. We find no mention of such a component of this decision anywhere in the DEIS.	This has been removed from the design criteria appendix, B.
8-t	As stated in our discussion of Purpose & Need, we concur with the declaration of epidemic insect populations within the project area and believe the proposed action clearly meets the plain-language requirements to qualify as an "authorized" project under HFRA Sec. 102(a)(4). We are concerned that the inclusion of "fuel treatments" or "fuel breaks" within the scope of the project may complicate compliance with the HFRA requirements for "old-growth" and large trees. Although they were raised as a significant issue in scoping comments and public involvement, these treatments may not be legally considered to be within the defined scope of authorized projects under 102(a)(4). We feel similar objective to those intended by the proposed fuel treatments could be accomplished with the same 40 sq. ft. residual BA commercial thinning (whole-tree harvest required), non-commercial thinning treatments to reduce insect risk, or some combination thereof, in proximity to private land. We do not advise including fuel treatments within the scope of this project.	The appropriateness of including fuels treatments and fuel breaks within this project has been thoroughly considered under the authorization of the HFRA. The commercial thinning will improve fuel conditions, but does not address understory fuels. Refer to responses to comments 7-I, 7-k, 7-x, 11-g, 11-j, 11-k and 11-p
8-u	Furthermore, we do not advise including the proposed 'swap' of late-succession stands within the project area. These elements of the action alternatives needlessly complicate the compliance of this project with the requirements of HFRA, and invite objections and litigation.	Comment noted. We feel the proposed change in stands designated for late succession management is appropriate for this project, under HFRA and is warranted in that it meets direction in the Forest Plan (Objective 207).
8-v	The demonstration of "a significant threat to an ecosystem component, or	The Forest Supervisor's November 9, 2004 letter of determination of an existing

	forest or rangeland resource” posed by a disease/insect epidemic is integral to qualifying a project to be authorized under Section 102(a)(4). The District has done a sufficient job enumerating the threatened ecosystem components and resources in the effects analysis. However, we believe it would well serve the analysis to centrally summarize the threats somewhere in the beginning of the document; perhaps in Chapter 1’s discussion of Purpose and Need or Management Direction. This needn’t be a lengthy explanation. However, clearly identifying the threats and citing the supporting analysis would lend clarity to the project’s grounds for authorization.	mountain pine beetle epidemic and the significant threat to forest resources which this poses has been added to the FEIS, in Appendix G.
8-w	Pursuant to HFRA Sec. 102(g)(5)(a), we hereby formally express our interest in participating in multiparty monitoring should the District receive sufficient interest from other parties.	Your interest in multiparty monitoring is noted.
9-a	The EPA appreciates the qualitative evaluation of soil erosion, sedimentation, and overall water resources quality in the National Forest. The DEIS projects no serious concerns about soil erosion and water quality or potential impacts from the proposed actions to additional runoff, erosion, and sediment to streams and other water resources such as riparian areas. Given the extensive timber harvesting proposed, however, combined with the extensive acreage affected by the Jasper fire immediately to the west of the Project, EPA has some concerns about water quality because of significant land disturbance and potential erosion and runoff from extensive harvesting and other activities, in conjunction with the high road density (3.7 miles per square mile of land) in the project area.	Comment noted and considered. See responses to other comments from letter 9.
9-b	Combined with habitat reductions in ponderosa pine, the high density of roads and their stream crossings contribute to concerns about wildlife habitat and its fragmentation and wildlife disturbance or mortality.	The alternative impacts to wildlife habitat are discussed in Chapter 3 of the EIS.
9-c	Related to our concerns about soils and water quality, we are concerned about the cumulative effects in the Black Hills National Forest for some water resources, fish and wildlife habitats and populations, soils, and other resources. Several recent projects have proposed aggressive harvest and thinning of large-diameter and other trees for fuels reduction and beetle management that are important for wildlife habitats. Larger ponderosa pine and other trees reduce large-scale fire risks, and these old forest structures and habitats are declining in the Black Hills because of recent projects and recent fires. The EPA recommends careful evaluation of cumulative impacts in the Final EIS, as outlined in our detailed comments, that fully considers the overall effects of this and other fire fuels- and MPB risk-reduction projects that are being conducted jointly.	Treatment prescriptions in all action alternatives would promote development of larger green ponderosa pine in the project area by reducing the potential for MPB susceptibility and reducing competition within stands. Cumulative effects of proposed actions and the proposed amendment are analyzed for each resource in Chapter 3 of the FEIS. Larger ponderosa pine trees are valuable for many resource reasons, including that very large ponderosa pine are more fire resistant than smaller diameter ponderosa pine. Also see responses to comments 7-k, 7-n, 11-uu and 11-vv.
9-d	We noted conclusions regarding how logging will positively affect the water flow regime (e.g., page 36). The hydrologic discussion does not evaluate the	The hydrology of the Black Hills is not similar to the Rocky Mountains which may be the basis for this comment. The Black Hills receives a large portion of

	<p>effects of Proposed Actions on the annual hydrograph. Those effects include baseflows, soil moisture, hydrologic support of downstream wetlands and riparian areas, and other effects that relate to greater storm runoff but less soil moisture and stream baseflow during frequent dry spells. Altering the forest hydrographs may have significant adverse impacts in the long run.</p>	<p>the precipitation during the growing season. The Rocky Mountains generally receives a large portion of the precipitation during the winter. There is not a spring runoff from snow melt as a snow pack generally does not develop in much of the Black Hills. Where the snow pack may develop, it is usually on the limestone plateau where runoff is not common. The current forest hydrograph is not natural and has been altered over time. The total volume under the hydrograph has been decreasing since fire has been excluded from the ecosystem and the biomass has been increasing on the landscape. This can have a negative toll on the wetlands and riparian areas because less water is available to the systems. We do not see lower soil moisture or less ground water recharge as the result of ‘logging for water’. We see the opposite. The rains that occur through out the summer have a better chance of recharging the soil moisture since less water is being used by less vegetation and the soils will be not as dry as they are now with all the current vegetation using up the water in the soil. Also with less water consumption by the vegetation more will be available for streamflow or groundwater recharge. The stream flow increase will generally be from water working its way through the system, subsurface. This process will also work for having additional water available for ground water recharge. As mentioned in the Watershed Specialist report, flow regimes do not appear to be adversely affected by dense road networks in the Black Hills. Where we see a concern is doing nothing. This will have and has had a negative toll on soil moisture, stream flow, ground water recharge, wetland and riparian areas</p>
<p>9-e</p>	<p>Our specific comments and questions (enclosed) can further clarify information in the Final EIS. We suggest that the Final EIS include the following information and actions: Quantify soil erosion and stream sedimentation impacts to understand differences among the alternatives and to confirm that adverse impacts will be fully mitigated and that there will be no degradation or impairment of water resources' State-designated uses.</p>	<p>Quantifying soil erosion and sedimentation is an exercise with questionable results. The best comparison for the alternatives is the actual acres being treated on severe erosion soils or acres treated within WIZ. The best method for determining relative environmental impacts is monitoring. Modeling can give a number but then the argument arises on what the numbers mean or which model is best. Generating a number is not helpful in understanding the impact as there is no threshold, criteria or standards to tell when there is an impact. The real key is to design and implement the project so it incorporates all the required Forest Plan Standards, which includes Watershed Conservation Practices and Best Management Practices. With implementation and effectiveness monitoring, this will ensure minimal, if any, impact to the aquatic environment. Quantification of soil erosion and stream sedimentation is not necessary to understand the differences among the alternatives. In the Watershed Specialist Report, soil erosion comparisons were completed by alternative for acres harvested on erosive soils. Open roads on erosive soils did not change with the alternatives. Sedimentation comparisons by alternative were completed by identifying acres treated within the Water Influence Zone (WIZ). Roads in the WIZ and road stream crossings did not change with the alternatives. These comparisons do not</p>

		give specific numbers, but one is able to compare alternatives. Our past Best Management Practices (BMP) monitoring has shown that past projects similar to this one have had no negative impacts on the watershed and streams. See the BMP Effectiveness section of the Watershed Specialist Report. The Watershed Specialist Report can be provided upon request.
9-f	Our specific comments and questions (enclosed) can further clarify information in the Final EIS. We suggest that the Final EIS include the following information and actions: To meet the intent of the Healthy Forest Initiative and the National Fire Plan and to increase protection of environmental resources, we recommend that the Final EIS include an alternative that focuses fire risk-reduction treatments in private land interface areas. A focused approach can substantially reduce the resources needed to accomplish objectives of those initiatives and plans to: Reduce risks to structures and private property; Enhance forest health by promoting older-forest structure and wildlife; Maximize the overall effectiveness and cost effectiveness of those practices.	On page 5 of the DEIS, the Purpose and Need for Action identifies proposed management actions to respond to Forest Plan Goals and Objectives, as well as address the National emphasis on fire/fuels hazard reduction. This purpose includes reducing the potential for widespread MPB related tree mortality. Therefore, treatments are not limited to private land interface. However, fuels treatments, including fuel breaks, are concentrated near private land. The action alternatives include varying levels of treatments and would have varying impacts to 'older forest structure,' and wildlife. The no action alternative is expected to result in the greatest change in mature forest conditions in the short and long term. Practices employed to achieve proposed actions are generally state-of-the-art to maximize overall effectiveness of treatment. The HFRA Section 104(c)(1)(C) states that for authorized projects not within the Wildland Urban Interface (WUI), such as Bugtown Gulch, no more than 1 additional alternative, beyond the proposed action and no action alternatives, should be studied, developed, and described. The Forest Service developed three alternatives in detail, including the No Action and Proposed Action alternatives, in response to issues raised by the public during scoping.
9-g	Our specific comments and questions (enclosed) can further clarify information in the Final EIS. We suggest that the Final EIS include the following information and actions: Consider habitat management practices particularly in important wildlife habitat management areas for species listed as Management Indicator Species or sensitive wildlife species that have documented declines over the National Forest. Retain more large, live trees and wildlife snags in harvested areas.	All MIS species are discussed in the FEIS. Evaluation of effects of the alternatives to R2 Sensitive Species is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in the DEIS, in Appendix D. Also see response to comments 7-k, 7-n, 11-uu and 11-vv.
9-h	Our specific comments and questions (enclosed) can further clarify information in the Final EIS. We suggest that the Final EIS include the following information and actions: To reduce cumulative effects, including erosion, sedimentation, and habitat fragmentation, EPA recommends that the project include reducing the number and miles of roads that are unneeded for healthy forest management, as part of the Preferred Alternative.	The Purpose and Need for action in this project is to reduce the potential for widespread mountain pine beetle related tree mortality and to reduce the risk of a large-scale high intensity wildfire in the project area. Reducing the number and miles of roads can have resource benefits, but is not essential to meeting the purpose and need of this project. Due to the urgent nature of this project, travel management was not included as part of the proposed action or alternatives.
9-i	EPA evaluates the potential effects of proposed actions and the adequacy of the information in a DEIS. The DEIS is rated "EC-2" (environmental concerns, insufficient information) under EPA's ratings criteria (enclosed [held in Project File]). The "EC" rating means that Alternatives does not require substantial changes, but EPA has identified environmental impacts	EPAs clarification of their rating protocol is noted. The Bugtown Gulch Project Area ID Team has endeavored to respond to the review comments by providing additional clarification as documented after each specific comment to letter 9. Clarification has been provided regarding specific activities and methodology planned for under the action alternatives. Additional specific description of

	<p>that should be avoided to fully protect the environment. The EC rating is based on EPA's concerns regarding the potential adverse impacts to water quality, soil erosion, and wildlife habitats from the Proposed Action. The potential for significant environmental degradation can be reduced by modifying the project to (1) reduce the overall impacts from timber harvesting in important wildlife habitats, and (2) encourage natural succession to mature ponderosa pine forest structure in back country and important wildlife habitats. The "2" rating means that the DEIS lacked sufficient information to thoroughly assess an alternative with the potential to achieve objectives to minimize fire and MPB risk while minimizing or fully mitigating the adverse environmental impacts to soil, water, wildlife, and other resources. Impacts to those resources could be quantified and better described in the Final EIS.</p>	<p>vegetation treatment, and design criteria and quantification regarding these alternatives is provided in the FEIS, Chapters 1 and 2 as well as the Project File. The tables at the end of Chapter 2 display detailed comparative summaries of the effects of each alternative and respective alternative treatment activities. Effects are compared based on quantitative and qualitative measurement indicators as described. Detailed description of impacts to soil, water, wildlife and other resources are presented in Chapter 3 of the FEIS. Disclosure of impacts is provided in both quantitative and qualitative terms.</p>
<p>9-j</p>	<p>We are concerned about the number of similar actions that have been proposed and are being implemented in the Black Hills National Forest and what that means for the cumulative effects on some water resources, fish and wildlife habitats and populations, soils, and other resources. In particular, recent projects (e.g., Prairie; Elk, Bugs and Fuels; Dean Area; Deerfield and now Bugtown Gulch) all have proposed aggressive harvest and thinning of large-diameter and other trees for fuels reduction and beetle management that are important for wildlife habitats.</p> <p>We recommend that this and future projects include design features and mitigation to begin reversing the negative trends for large trees and associated wildlife habitats. Old forest structures and habitats are noted to be declining because of large fires and related factors such as MPB infestation. All of the recent projects, including this one, disclosed reductions in habitats for declining wildlife species (both in the Black Hills National Forest and/or throughout Forest Service Region 6) such as northern goshawk, pygmy nuthatch, Black Hills' American Dipper, brown creeper, black-backed and Lewis' woodpeckers, and other sensitive wildlife species that depend on mature ponderosa forest. Significant habitat alteration overall has been noted and unmitigated over an extensive area of the National Forest from this project when combined with proposed actions in the projects mentioned above. Given the direction of Phase II Amendment, which has not yet been finalized, we recommend careful evaluation of cumulative impacts in the Final EIS for this and other forest thinning and harvest projects with objectives for vegetative management that will reduce fire fuels and wildfire and that are proposed to reduce beetle</p>	<p>The cumulative effects analysis has considered past, present and reasonably foreseeable future activities and their potential combined impact. The cumulative effects are analyzed varies by resource and therefore, the particular projects considered may also differ by resource. Refer to Appendix E for a listing of past, present and future projects considered in the cumulative effects analysis. Also refer to resource sections in the FEIS for discussion of cumulative effects by resource.</p> <p>The proposed actions are designed to reduce the potential for large-scale beetle caused mortality and large scale high intensity wildfire, which you note as factors which reduce large trees and old forest structure. These treatments will improve the potential for this area to develop large green trees and old forest structure.</p> <p>All MIS species are discussed in the FEIS. Evaluation of the effects of the alternatives to R2 Sensitive species is found in the Bugtown Gulch BA/BE. Determination from the BA/BE can be found in Appendix D of this EIS.</p> <p>The American dipper is not an MIS or Sensitive species and was therefore not analyzed in the project. In addition, habitat for this species does not occur in the project area.</p> <p>The Phase II Amendment will provide management direction for future projects, but does not apply to this project.</p>

	infestation risk.	
9-k	<p>As our comments indicated on similar previous fire reduction and beetle management projects, the EPA's most significant concerns generally are related to the potential impacts to soil and water resources. We recognize the difficulty in quantifying impacts and the sufficiency of existing monitoring and other information to establish an environmental baseline for those resources. Also, as we have indicated on previous projects, our concerns relate to the harvesting and other management practices but particularly the high density of roads, both system and non-system/user-created, in most of the Black Hills National Forest. This project has a road density of 3.7 miles per square mile of the project area.</p> <p>We encourage travel management actions to be included in the Final EIS Preferred Alternative. Closing, obliterating, or relocating existing roads has the potential to reduce cumulative impacts to natural resources such as water quality and wildlife habitats. We suggest that the National Forest consider reducing the number of stream crossings on open roads to address erosion and sediment issues.</p>	<p>Your comment and concern is noted. There were only 5 stream crossing CDAs noted. The action alternatives include activity to eliminate these CDAs.</p> <p>Refer to responses to comments 9-h and 9-f.</p>
9-l	<p>We did not note severe adverse impacts described for streams and related resources in this project. The EPA appreciates the commitment to developing timber sales that include best management practices and potential mitigation measures to reduce the impacts of roads and other actions related to the timber sale, which protect water resources. The EPA appreciates the qualitative evaluation of soil erosion impacts, the related potential for sedimentation, evaluation of overall water quality in the National Forest, and the temperature and oxygen availability in this DEIS.</p>	<p>Severe adverse impacts to the streams are not anticipated with the implementation of this project. See the Watershed Specialist Report. All projects include implementation of the Forest Plan Standards that include Watershed Conservation Practices and Best Management Practices.</p>
9-m	<p>Quantified estimates of erosion and sedimentation would provide greater information for public disclosure and Forest decision-making, by providing a better understanding of the differences among the proposed alternatives as they affect water resources. Please consider quantified estimates of the proposed Project on soil erosion, sedimentation, and aquatic ecosystems, as was previously done for soils and sediment in the Black Hills National Forest's "Elk, Bugs and Fuels Project." That project is similar to this proposal in its Purpose and Need and provided quantified information to determine the relative environmental impacts to those resources. Without quantified or qualitative analysis of the current aquatic environment and potential Project impacts, soil and water resources remain primary concerns for EPA. Those quantified estimates in the "Elk, Bugs and Fuels Project" demonstrated significant erosion and sediment losses from aggressive vegetation management actions, and disclosed substantial differences among</p>	<p>Refer to response to comment 9-e.</p>

	alternatives. Such information can be used to determine whether additional mitigation practices may be practical.	
9-n	The EPA recommends that larger trees (e.g., trees 16 inches dbh or more) be retained to the extent possible to retain the most fire resistant trees thereby promoting long-term soil retention. Besides soil and water quality benefits, other ecological benefits are provided, such as wildlife habitats for species that depend on larger ponderosa trees and old forest structure.	Refer to response to comments 7-k, 7-n, 11-uu, and 11-vv
9-o	The DEIS projects no serious concerns about soil erosion and existing water quality or potential water quality impacts from the proposed actions to additional runoff, erosion, and sediment delivery to streams and other water resources. Further, the DEIS does not indicate significant impacts to riparian areas and related resources such as migratory bird and other wildlife habitats. The watershed overall is described as “low sensitivity” for watershed impacts (pages 29-30), though harvesting activities will occur that will reduce stand density over 70 percent of the project area and an estimated 9 percent/1,000 acres of the harvesting will occur on soils with a very high erosion hazard rating (page 40) and includes 1.6 miles of open roads on soils with a very high erosion hazard rating (not known to cause problems currently). The road density in the project area is 3.7 miles per square mile of land. Also, the project activities will occur over 51 percent of the project with soils that are subject to compaction, but compaction problems are expected to be minimal. Based on the information provided, EPA has concerns about water quality largely because of the high road density and its related impacts to water quality and aquatic uses of water resources in conjunction with extensive harvesting and other activities. The high road density and stream crossings in the project area contribute to concerns such as wildlife habitat and its fragmentation and wildlife disturbance or mortality.	<p>Maintaining water quality is critical. The Agency is mandated by the Clean Water Act to protect it. High road densities and extensive harvesting in itself does not necessarily cause impacts to water quality and aquatic uses of water resources. Potential impacts to the water quality and aquatics come from roads and harvest units that are located in the Watershed Influence Zone (WIZ). In the DEIS under the sediment section, each alternative describes the amount of harvesting in the WIZ, amount of roads in the WIZ, stream crossings and contributing Connected Disturbed Areas (CDA). For the Bugtown Gulch project area the amount of activity in the WIZ was used as a comparison for the alternatives. With the implementation of the Forest Plan Standards and Guides (FPS&G), which include Watershed Conservation Practices (WCP) and Best Management Practices (BMP), the amount of sediment generated should be minimal and should not have great impact on the aquatics. In relation to the harvest units, for Alternative 2 0.2% of the units are within the WIZ and Alternative 3 has 0.2%. So the actual amount of units that pose a direct threat is small even with the extensive harvest proposed in the watersheds.</p> <p>All MIS species are discussed in the FEIS. Evaluation of effects of the alternatives to R2 Sensitive Species is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in the DEIS, in Appendix D.</p> <p>Refer also to responses to comment 9-h.</p>
9-p	We have substantial concern about conclusions regarding how logging will have a positive effect on the flow regime (e.g., page 36) in the National Forest without evaluating the effects on the annual hydrograph, including baseflows, soil moisture, hydrologic support of downstream wetlands and riparian areas, and other effects that relate to greater storm runoff but less soil moisture and stream baseflow during frequent dry spells. The DEIS points out that many streams are prone to flash flooding because of steep gradients and intense thunderstorms, unstable stream bank and erosion, and reduction in flows from vegetation alteration over the past century. Altering the natural forest hydrographs may have significant adverse impacts on soil	Refer to response to comment 9-d.

	<p>moisture and forest health in the long run and substantially increase peak flows during flash floods and lead to greater soil erosion and related stream sediment. Those potential effects were not evaluated or discussed in the DEIS. High road density may contribute further to peak flows during and following harvest activities. We suggest that the Final EIS address hydrologic issues in some detail. In addition to greater peak storm flows and spring runoff and their related soil erosion and sedimentation, proposals to 'log for water' overall can cause adverse impacts such as lower soil moisture and groundwater recharge, potentially less vegetation growth (especially during drought), lower stream baseflow because of groundwater depletion, and greater evaporation losses of water supplies in reservoirs, lakes and ponds compared to current conditions where water evaporation is limited by soil and aquifer retention and released more evenly throughout the year.</p>	
9-q	<p>EPA supports management actions to reduce the risk of wildfire in wildland-private land interface zones and near structures or important recreation and cultural resources. Allowing for more natural forest succession in other areas that do not have urban use values would better support wildlife habitat and other goals, such as old-forest structure and water quality. Larger ponderosa pine trees often reduce large-scale fire risks because of greater spacing, higher limbs, and other characteristics that make them generally less susceptible to ignition or destruction.</p>	<p>Refer to responses to comments 9-c, 9-f, 9-j, 7-k, 7-n, 11-uu, and 11-vv.</p>
9-r	<p>EPA priorities for treatments where the effectiveness for fire prevention is maximized and adverse environmental impacts may be minimized. One such approach would be to: First treat areas near and adjacent to private property and recreation facilities for fire and MPB beetle infestation by using mechanical thinning, prescribed fire, bait and sanitation, and fuel breaks. For areas that are managed for commercial timber production, emphasize harvest first in those areas that have system roads and minimize the impacts to important wildlife habitats and aquatic ecosystems. In other areas, consider allowing ponderosa pine systems to move towards late succession forest. This can be accomplished over the project area by limiting management practices (for example, using prescribed fire) or, where possible, by eliminating active management. The goal for such practices would be (1) to enhance wildlife habitat and other ecological values in areas that are most important to sensitive and important wildlife, and (2) to study fire risk and behavior in naturally succeeding areas.</p>	<p>Your suggested priorities for treatments in project area are noted. It is important to recognize that the forest environment is constantly changing; it is not a static environment.</p> <p>Fuel treatments are proposed near private land, see maps 5 and 6 in Appendix A. There are no recreation facilities. The Bear Mountain lookout does not have dense forested habitat directly adjacent to it and therefore, would not require fuel breaks.</p> <p>No new system roads would be constructed in any alternative. All activities would be accomplished utilizing existing roads.</p> <p>Active management is deferred in goshawk nesting habitat in alternative 2 and additional areas in Alternative 3 (see maps 5 and 6 in appendix 1). These deferred areas will remain at a higher risk for MPB susceptibility, but will benefit from surrounding treatments.</p> <p>Prescribed fire is not proposed as a management tool due to concerns over</p>

		<p>further stressing trees and making them more susceptible to the MPB epidemic.</p> <p>Also refer to responses to comments 9-c, 9-f and 9-g</p>
9-s	<p>Presumably the risk of infestation and proposed harvest are greatest in those areas with large-diameter trees most susceptible to invasion by MPB. Given current science about beetle ecology, management technology, and available funding, control and suppression activities appear most likely to be successful where protection is targeted on highly valued management areas, such as wildland-urban interface zones, campgrounds, and structures. We know of no science that indicates forest management actions can stop a beetle epidemic. Further, a recent report by the Xerces Society, which synthesizes independently reviewed research, concludes that overall, “There is no evidence that once an infestation has started we can log our way out of it...Even thinning, which is widely promoted as a solution, has mixed results. Caution should be used when thinning for long-term pest suppression because of the potential for increasing the simplicity of the forest and thus its susceptibility to future infestation.”</p>	<p>In general, stands of trees 7-13”: in diameter are most susceptible to MPB (Allen, 2003). In field surveys conducted in the project area in 2004 and 2005, the average diameter of infested stands was between 11-12” dbh.</p> <p>We do not suggest that the proposed treatments will stop the beetle epidemic. Rather, the proposed actions are designed to minimize large scale tree mortality across the landscape.</p> <p>The Xerces report is not a peer reviewed article. It is a limited review of selected literature. There are somewhere around 100 articles reviewed and summarized in Mr. Black’s synthesis. There are volumes of other articles in the literature that also deal with all types of silvicultural actions and how they do or do not impact insect populations. Mr. Black has reviewed a very selective and minor piece of the literature regarding this topic. There are many more articles in the literature that would provide a distinctly opposite view as to the one that is portrayed in Mr. Black’s synthesis. There is also a large portion of the professional forest entomology community, who have extensive field experience evaluating and advising forest managers on how to reduce insect impacts that have differing views than Mr. Black on how forest management can and does reduce the risk of bark beetle outbreaks. This group includes many of the scientists of the work Mr. Black has reviewed. Many of these scientists would have a contradictory point of view from Mr. Black on how their work has been interpreted.</p> <p>As this document relates to the Bugtown Gulch project in particular, we looked at how many of the articles reviewed are directly applicable to mountain pine beetle in ponderosa pine in the Black Hills. The report contains only one that is directly applicable is Olsen et al. 1996, with annotated comments on page 67 of the synthesis. In the notes about the article Mr. Black quotes “The groups of mountain pine beetle-attacked trees did not coincide with the highest basal areas, but did occur where basal areas were relatively high (150 to 250 square feet per acre).” This comment is very much in line with the main objectives for the Bugtown Gulch project, which is to reduce stand density (basal area) to lower the susceptibility to mountain pine beetle.</p>
9-t	<p>The EPA recognizes the multiple objectives for forest thinning, including the economic values of forest products. Our concerns relate to natural resource values and the justification of forest thinning to reduce beetles by reducing</p>	<p>The Bugtown Gulch project does not propose to remove all large trees. In fact, removal of large green trees will be the exception rather than the rule in this project. Refer to response to comment 7-k, 7-n, 11-uu, and 11-vv.</p>

	<p>the number of large trees. Therefore, we recommend concentrating control and suppression actions on areas where individual tree loss would be detrimental to the values associated with an area. We recommend that larger trees be retained to the extent possible to retain the most fire resistant trees thereby promoting long-term soil retention, as well as other ecological benefits. Proposed treatments in each alternative focus on objectives to (1) reduce hazardous fuel concentrations and (2) reduce stand susceptibility to beetle infestation. These two objectives can conflict where the proposed treatments, particularly for commercial harvest, will remove larger trees that are both more susceptible to MPB attack and are the most fire resistant.</p>	<p>Beetles will be removed by sanitation cutting of actively infested green trees. The existing epidemic is resulting in tree mortality beyond individual tree loss. Some areas have experienced 100% mortality. Therefore, this project proposes to consider the landscape for suppression and prevention treatments.</p> <p>In general, dense stands are more likely to experience higher intensity fire than more open stands. In this regard the 2 project objectives of reducing the potential for widespread beetle caused mortality and larger scale wildfire, are compatible.</p>
<p>9-u</p>	<p>The EIS should discuss the natural role that beetles play in forest health and succession. EPA's bibliography, http://www.epa.gov/region08/compliance/nepa/nepadocs/beetlebib.html, addresses forest management issues that include MPB beetle management. The citations below are references in that bibliography. Much of the public perceives epidemic beetle populations as part of an unhealthy forest environment. EPA understands the importance of protecting designated values in the analysis area and adjacent, private land interface zones. However, beetles, fires, and other natural disturbances can foster a healthy, diverse forest. Forests have proven resilient, if not dependent, on the boom and bust cycles of MPB beetle (Alexander 1974; Baker and Veblen 1990; McCambridge and Knight 1972; USDA Forest Service 2000; Zhang et al., 1999). Beetle infestations serve as disturbance and regeneration agents similar to the role of fire and, to some degree, of mechanical thinning or harvest that can be designed to mimic or replace those natural functions. After beetle outbreaks, forests are often thinner and more diverse and, therefore, more capable of sustaining regenerative ground fires or smaller, stand-replacing fires that ponderosa ecosystems depend on for the evolution (Schmid and Mata 1992; USDA Forest Service 2000).</p>	<p>The EIS does acknowledge that beetles have always been a part of the Black Hills Forest ecosystem. Periodic epidemics occur generally resulting in large scale tree mortality. The ponderosa pine stands in the Black Hills would become stagnate without some disturbance. The means of that disturbance is somewhat manageable in the known risk factors, such as stand density, and can be mechanically altered. Given the resource values and private property threatened by MPB in this area, active management is proposed.</p>
<p>9-v</p>	<p>Considering that beetle infestations are cyclic in nature, multiple future treatments would be needed for the analysis area. Hence, while the EIS indicates that the Alternatives allow for natural succession and its benefits for wildlife habitats and old forest structure, past and planned National Forest management does not support that natural succession. Therefore, additional funding will be needed to sustain the proposed aggressive harvest and thinning treatments over the long run. Aggressive forest fire suppression, especially when combined with the effects of extensive livestock grazing, can result in a thicker, less diverse forest that is more prone to catastrophic, stand-replacing fire events and large-scale beetle infestations. The Proposed Action will require the Forest Service to intervene on an ongoing basis, to</p>	<p>The forest is dynamic and will grow more dense over time following any proposed treatments. However, it is expected that the stands proposed for preventative thinning will not develop into high hazard condition for at least 25 years. Future management actions for fuels treatments or MPB susceptibility will need to consider what balance of resource to encourage, given the management direction, available funding and public sentiment of that time.</p>

	<p>maintain conditions that minimize the risks of insect and disease epidemics. Thinning will result in more uniform spacing, species and age class and lead to greater need for active management of fuels in the future, such as repeated thinning that suppresses natural succession. If a project goal is to create conditions which will make insect and disease epidemics less likely to develop in the future, some studies suggest that beyond the first few years of extensive tree mortality from beetles and fine fuel input from standing dead trees, the risk of catastrophic wildfire decreases again to background levels (e.g., Schmid and Mata 1996).</p>	
9-w	<p>Thank you for discussing the proposed actions that are planned to protect water quality and other resources at road crossings. Detrimental effects of roads such as erosion, water channelization, and sediment transport can be reduced with effective implementation and monitoring of best management practices (BMPs). Other effects, such as wildlife habitat fragmentation and destruction, wildlife mortality, noxious weed transport and dispersal, and increased human use and concentration are more difficult to avoid or mitigate.</p>	<p>Comment noted. Many of these items are discussed in various places in the DEIS.</p>
9-x	<p>Substantially reducing the number of roads as part of implementing a Preferred Alternative would be the best approach to mitigate the detrimental effects above. Road obliteration also supports fire risk reduction objectives, particularly if located near private lands that are vulnerable to ignition from motor vehicles and recreation adjacent to them. As part of the Final EIS, we suggest a discussion of whether and how many miles of roads will be obliterated in the project area over time.</p>	<p>Refer to response to comment 9-h.</p>
9-y	<p>With a significant percentage of the project area presumably available to off-road vehicle use, the risk of additional user-created roads and trails exists. As the recent Deerfield Project DEIS noted, motorized uses have continued to expand throughout the Black Hills. A large-scale commercial harvest in this project has the potential to further that trend locally by opening up previously forested and more inaccessible areas to off-road vehicles, and should be evaluated for the long-term health and for the overall, long-run satisfaction of recreation users, local socioeconomic impacts, and wildlife.</p>	<p>We agree that off-road vehicle use is increasing in the Black Hills. The effects of this in the project area were considered in the cumulative effects analysis completed for each resource area. See Appendix E, page 6. A forest level travel management review is currently underway. This review is expected to address the issues of off-road vehicle use on the Forest.</p>
9-z	<p>Noxious weeds have been noted to infest over 80 percent of Forest lands in the Black Hills National Forest. The Proposed Action's aggressive harvest and thinning actions in backcountry areas can be expected to disperse noxious weeds into previously uninfested areas. We recommend that proposed actions be focused on already disturbed areas adjacent to private lands where the risks of wildfire are a concern for the public. This an other prevention practices should be implemented for timber harvest and thinning operations (e.g., washing equipment that is used in infested areas prior to</p>	<p>We agree that efforts should be made to reduce the potential for noxious weeds to spread. Noxious weed treatments and monitoring are an integral component of the action alternatives. Because the area already contains noxious weeds, washing of equipment was not considered to be necessary.</p>

	operations in uninfested areas).	
9-aa	Based on conclusions in Chapter 3, it appears that there are many adverse, unmitigated impacts to sensitive wildlife. It appears that the density and size of snags, late succession forest, riparian and aquatic communities, and other resource objectives do not fully support sensitive wildlife. For example, a recent research study (Spiering, David J. and Richard L. Knight, <i>Snag Density and Use by Cavity-Nesting Birds in Managed Stands of the Black Hills National Forest, Forest Ecology and Management</i> , 214(2005): 40-52) concluded there is strong correlation between the density of ponderosa pine snags and cavity-nesting bird abundance. The study concluded that large-diameter snags in particular are rare in managed areas of the National Forest, and larger snags are much more likely to host cavity-nesting bird nests. The study also concluded that cavity-nesting birds are rare in managed ponderosa pine stands and appear to be lower than historic accounts of those species, because nearly all snags in those stands are too small to be used as nest trees.	<p>Land ownership and commodity use patterns have change since the (1874) Custer expedition and the findings in the report by Spierling and Knight (2005) are not challenged. The BHNF Forest Plan has provided Standards and guidelines that are expected to "conserve or enhance habitat for sensitive species and species of special interest (MIS)"- Objective 221. Project design and the very nature of the MPB infestation will assure that snags, including large diameter snags, will remain in the project area for the foreseeable future.</p> <p>All action alternatives meet the Purpose and need for this project, as well as Forest Plan direction with 1 exception. Alternative 2 would require a nonsignificant Forest Plan amendment in regard to big game habitat effectiveness in management area 5.4.</p> <p>Refer also to the response to comment 9-g.</p>
9-bb	The EPA recommends that the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service be consulted to reduce and mitigate adverse fish and wildlife impacts. For example, we urge full consideration be given to protecting the post-fledging area and nesting territory for northern goshawk, consistent with Forest Standards and Guidelines and U.S. Fish and Wildlife Service guidance and management protocols.	<p>The Bugtown Gulch Project is located in South Dakota. The South Dakota Game, Fish and Parks Department has been consulted and has responded to the DEIS (see Agency Response to Comments, Letter 7).</p> <p>The U.S. Fish and Wildlife Service has been actively involved at the Forest level. The USFWS is not consulted at the project level unless a determination is made on a Threatened and Endangered Species that may impact these species that would require Section 7 (ESA) consultation.</p> <p>There are some differences in Forest Plan standards and guidelines and US Fish and Wildlife Service guidance on goshawk habitat. This project is consistent with Forest plan standards and guidelines for the northern goshawk.</p> <p>Project impacts to the northern goshawk are discussed in the Wildlife section of this EIS, as well as in the Wildlife Specialist report and BA/BE completed for this project. A summary of determinations from the BA/BE can be found in Appendix D of this EIS.</p>
9-cc	The EPA recommends that larger trees be retained to the extent possible to provide wildlife habitats for species that depend on larger ponderosa trees and old forest structure such as northern goshawk, American marten, pygmy nuthatch, brown creeper, black-backed and Lewis' woodpeckers, and several species of migratory birds. Other ecological benefits, including fire risk reduction and soil and water resource protection, are associated with those habitats.	Refer to responses to comments 7-k, 7-n, 11-uu, 11-vv.

9-dd	<p>Because of the significant adverse impacts from the Preferred Alternative, the EPA recommends that the Forest Service develop a modified Alternative that meets the Purpose and Need to reduce the risks of MPB infestation and forest fire. Please consider selecting such an alternative as the Preferred Alternative. We suggest the following major modifications, based on our comments above to reduce adverse environmental impacts and improve project effectiveness:- As part of the proposed actions, aggressively decommission and obliterate unneeded system roads and other roads to reduce the overall road mileage in the Project Area. A road density standard that protects of wildlife habitats, water quality, soils, fish and aquatic habitats, and other resources could be consistent with Forest planning objectives and long-term travel management planning. - Minimize cutting and thinning in back-country areas, to protect wildlife habitats and sensitive, stable or declining wildlife species to the extent practicable and achieve old forest structure goals. We recommend retention of large-diameter trees (e.g., 16 inches dbh or greater), as provided in recent alternatives for the Deerfield Project of the Black Hills National Forest, Mystic Ranger District, as part of your Preferred Alternative. Focus fire risk and fuel reduction actions adjacent to private lands, areas with high ecological significance, important or valuable Forest infrastructure such as buildings and campgrounds, sensitive watershed protection areas, and so forth.</p>	<p>The DEIS does not identify “significant adverse impacts” from the action alternatives. The Responsible Official has the option of selecting a modified alternative that will meet the Purpose and Need.</p> <p>See all responses to letter 9, comment(s) a-cc.</p>
10-a	<p>Lack of progress on the Wabash timber sale (WTS). No resolution to the contract problems between the Wyoming Sawmills and the Forest Service threatens the successful completion of the project. This issue was raised at the open house on 1-20-05. Sixty landowners in the Wild land-Urban Interface began an effort to put pressure on both Parties to no avail.</p>	<p>The Wabash timber sale contains several units within the Bugtown Gulch project area. The impacts of the potential cumulative effects have been considered in the analysis. These are 2 separate projects, neither dependant upon the other. Therefore, the Wabash timber sale ‘contract problems’ is outside the scope of the Bugtown Gulch project.</p>
10-b	<p>A step that could be considered that would help the landowners adjacent to the WTS, is to allow the 300 foot fuel break. This would have to be negotiated with Wyoming sawmills. Incidentally, the footage for a fuel break is not mentioned in Alternative 2, page 16, paragraph 3, as in Alternative 3.</p>	<p>Because the Wabash timber sale is an active timber sale, no treatment is proposed within those units. The proposed fuel breaks would be 300 feet, that has been added to the FEIS.</p>
10-c	<p>Exclusion of Economic Concerns. In this section on page 141 there is no recognition of possible breach of lumbering contract. Such is the probable situation with the Wabash. Conversations with Wyoming Sawmills leads me to believe that the Wabash Timber Sale will not go as planned. Also the request by Wyoming Sawmills that the contract be terminated indicates theiior intentions. The costs and revenue sections of this DEIS do not reflect such possibilities given the evidence of Wyoming Sawmills intentions. Or, does the BHNF Service know something that is not public?</p>	<p>The economic analysis for the Bugtown Gulch project includes the costs and benefits associated with this project. The Wabash timber sale is a separate project and therefore, outside the scope of this project.</p>
10-d	<p>Lack of Watershed Improvements. Drought conditions, extra run off from the project’s treatments and continued grazing of cattle along stream beds</p>	<p>Extra runoff because of the reduce transpiration as a result of the project is not expected to degrade the stream and water quality as you stated. It is expected to</p>

	<p>will continue degrading the stream and water quality. Ninety-one percent of the North Fork of French Creek’s drainage is on National Forest land however most of the stream is on private land. Streams on forestland in the treatment area are in bad shape, example: the stream along Upper French Creek Road. Cattle grazing makes them worse. Fencing the streams along with watering tanks for cattle that can be filled by a spring or water that is trucked in, would improve stream conditions.</p>	<p>help it. As stated in the DEIS, “These activities would have a positive effect on stream temperature and oxygen.” We have to disagree with your statement, “Streams on forestland in the treatment areas are in bad shape”. Field inventories of the streams found some problem areas that were listed in the DEIS and the Watershed Specialist Report. Overall the streams are in good shape. Cattle have impacted areas but it does not represent all of the streams. Fencing as you mentions would be one way to protect the streams from cattle but that is only one way. There are other ways through management. The grazing issue is out of the scope of this project and will have to be addressed by different avenues. However, the problems sites that have been identified have been forwarded on the range staff for consideration. Working in concert with the landowners to protect riparian areas is a good idea.</p>
10-e	<p>In general the actions of the Bugtown Gulch Project directed toward reducing the fuel load and controlling the mountain pine beetle are commendable and have the support of the community. However there is continuing concern regarding the Wabash Timber sale impact on the economic and environmental factors of the Project.</p>	<p>Your support of the proposed treatments in the Bugtown Gulch area is noted.</p> <p>Refer to responses to comments 10-a and 10-c on Wabash.</p>
11-a	<p>The Bugtown Gulch timber sale is an incredibly large timber sale. Proposing to log upwards of 24,000,000 board feet, enough timber to fill over 48,000 logging trucks, the Bugtown Gulch timber sale is extremely large compared to most other timber sales authorized on the BHNF, which typically propose only between 3,000,000 and 10,000,000 board feet of logging.</p>	<p>Your comments are noted and considered. This project does propose aggressive thinning treatments in this area to lower mountain pine beetle susceptibility.</p>
11-b	<p>In addition to its size, its justification is equally egregious and threatening. The Black Hills National Forest is already one of the most heavily logged National Forests in the United States and the most heavily logged Forest in Region 2 of the U.S. Forest Service. Most, if not all of the Black Hills National Forest has been cut at least once, with most areas cut three to four times in the last century. Mehl (1992), stated “Virtually all of the accessible areas have been cut over at least once since the mid 1870’s” (p. 114). He further stated, “Since little old-growth ponderosa pine remains in the Black Hills old growth will have to develop from existing stands.” Id. In addition, numerous scientific studies clearly demonstrate that past logging has led to declines in snags, or standing dead trees, fragmented forest habitat, led to declines in water quality and soil productivity, and has overall decreased the diversity of plant and animal communities in the BHNF.</p> <p>Most recently, Spiering and Knight (2005) concluded “Our data confirm that on the Black Hills National Forest, the number of large diameter snags is well below the proposed Forest Service standards for the retention of snags” (p. 47). The two also noted that cavity-nesting birds were detected</p>	<p>The purpose and need for action is explained in Chapter 1 of this EIS.</p> <p>All MIS species are discussed in the FEIS. Evaluation of effects of the alternatives to R2 Sensitive Species is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in the DEIS, in Appendix D.</p> <p>Late Succession: See Agency Response to comment 11-r Snags: See Agency Response to comments 11-uu and 11-vv Fragmentation: See Agency Response to letter comments 10 and 11.</p> <p>Alternative Effects on water quality and soil productivity are discussed in the Watershed, Geology and Soils section of Chapter 3.</p> <p>Alternative impacts to habitat fragmentation are discussed in the Wildlife Section of Chapter 3 of this EIS.</p>

	<p>“infrequently” in managed ponderosa pine stands and concluded, “The low numbers of cavity-nesting birds in managed ponderosa pine stands in the Black Hills National Forest is probably because nearly all snags in these stands are too small to be used as nest trees” (p. 50).</p> <p>Why the USFS would consider such a large logging project in light of these effects is not explained in the DEIS.</p>	
11-c	Besides this, the Bugtown Gulch timber sale DEIS seems to fail 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 Forest. Trade-offs are not adequately discussed, nor are they assessed.	The FEIS discloses the effects of various vegetation treatments to reduce the risks of widespread beetle caused mortality and large scale high intensity wildfire in the project area. These effects are based on interdisciplinary analysis, scientific literature and first hand survey observation of local conditions and experience.
11-d	The outcome of this timber sale seems predetermined, especially as evidenced by the fact that the USFS is pushing forward with the project under the Healthy Forest Restoration Act (“HFRA”). The DEIS seems to exaggerate “forest health” concerns in an attempt to justify more commercial logging in an already stressed forest ecosystem.	The purpose and need for action is explained in Chapter 1 of this EIS, including explanation of why this project is an authorized project under the Healthy Forest Restoration Act (HFRA).
11-e	Most disturbingly, is that the DEIS claims that more logging and thinning will address forest health concerns, when clearly past logging and thinning has apparently done nothing but lead to a decline in forest health.	The proposed activities would reduce stands susceptibility to mountain pine beetles and lessen the potential for widespread high intensity wildfire. While logging and thinning has certainly occurred in the past in this area, the forest is dynamic. Stands will grow more dense over time unless some disturbance, in the form of wildfire, insect infestation or management activity, occurs.
11-f	While the Bugtown Gulch timber sale proposal should be scrapped immediately in the name of saving wasted resources, especially given that the timber sale stands to lose almost \$650,000 (see, DEIS at 142), we understand that there may be a need to ensure better protection of homes and communities within the project area. Thus, if the USFS chooses to continue to move forward with the Bugtown Gulch 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. This is not only the responsible option to pursue from the standpoint of ensuring good stewardship of publicly owned forest resources, but also from the standpoint of fiscal prudence. If the USFS chooses not to analyze in detail such an alternative and ultimately select such an alternative, we request the agency fully explain its reasoning for doing so.	Some minor adjustments have been made to the economic analysis in the FEIS. The newly calculated values are reflected in the following discussion. There is a negative Present Net Value in Alternative 2 of \$463,092 (a change from \$646,961 in the DEIS). The only financial benefit included in the economic analysis is the estimated timber value. There are indeed other non-economic benefits which are not quantified in dollar value. The estimated cost of implementing other actions under Alternative 2 such as: fuels treatments, and fuel-break construction are relatively expensive treatments which do not result in a quantified financial benefit. However, these treatments do provide other benefits. The economics of your suggested alternative would be highly deficit, given that no economic benefit could be incorporated. Funding of these other actions must come from appropriated money and/or cooperative sources. Fuel-break thinning along private land is planned for under all action alternatives. These actions are part of the greater emphasis embodied in the Purpose and Need. Your suggested alternative would not meet the purpose and need for this project to reduce the risk of widespread beetle caused mortality because trees above 7” dbh are most susceptible to beetles. Further the HFRA at Section 104(c)(1)(C) states that for authorized projects not within the Wildland Urban

		Interface (WUI), such as Bugtown Gulch, no more than 1 additional alternative, beyond the proposed action and no action alternatives, should be studied, developed, and described. The Forest Service developed three alternatives in detail, including the No Action and Proposed Action alternatives, in response to issues raised by the public during scoping.
11-g	We continue to have concerns that the USFS is inappropriately authorizing the Bugtown Gulch project under the Healthy Forests Restoration Act. The DEIS indicates the timber sale is being authorized under Title I of the “Healthy Forests Restoration Act” (“HFRA” or “HR 1904”). A law that has been sharply criticized by scientists as proposing a “one size fits all” management scheme to diverse forest ecosystems in the Rocky Mountains (Schoennagel et al 2004).	The Bugtown Gulch project is an authorized hazardous fuel reduction project under section 102(a)(4) of the Healthy Forest Restoration Act of 2003. The area qualifies under section 102(a)(4) because there is an existing mountain pine beetle epidemic occurring within the project area which poses a significant risk to resource values on National Forest and private lands. More information on HFRA can be found in Chapter 1 of this EIS or at www.fireplan.gov/healthyforest/index.html
11-h	In particular, studies have noted that many ponderosa pine forests in the Rocky Mountains, including those in the Black Hills fall within a mixed-severity fire regime, experiencing both surface fires and stand-replacing fires (Shinneman and Baker 1997, Schoennagel et al. 2004). Thus many ponderosa pine forests are for the most part, not outside their range of natural variability with regards to fire return intervals and/or fire regimes.	The fire regime in the Bugtown Gulch project area was determined to be low to mixed severity based on the Potential Natural Vegetation Group for the Black Hills and the computer generated Fire Regime Condition Class (FRCC) score card. Fire regime group one represents this fire regime. Refer to the Fire and Fuels section in Chapter 3 and the HFRA. The scorecards are available in the project area.
11-i	Thus no forest health concerns exist in these forests in relation to perceived “fuels building” and/or “unnatural fire risk.” However, scientists have found that many ponderosa pine forests in the Rocky Mountains, including the Black Hills, have been extensively impacted by industrial logging and road building (Mehl 1992, Shinneman and Baker 1997, 2000, Anderson and Cromption 2002, Spiering and Knight 2005). The result is that, while fuel buildups and/or fire risk levels are not elevated beyond natural levels, the forests support far less old growth and are much more fragmented than they naturally should be. In other words, while there is no scientific data to suggest that these forests are at any greater risk of wildfire than they were 10, 20, even 50 years ago or more, there is a wealth of scientific information suggesting that road building and logging has significantly and detrimentally impacted these forests and the natural values they support.	There is a mountain pine beetle epidemic in this project area. Refer to letter signed by the Forest Supervisor, in Appendix G. As mortality increases, the fuel models change and suggest fuel conditions which would exhibit much higher fire intensity and potential for spread. See the Fire and Fuels section of Chapter 3. See response to comment 11-r in regard to late succession (old growth). Refer to the Wildlife Section of Chapter 3 in the EIS for information regarding fragmentation.
11-j	If “forest health” is the goal of HFRA, then its authorities have no relevance to the Bugtown Gulch timber sale and it is inappropriate to pursue the logging under such authority. If the USFS proceeds anyway to authorize the Bugtown Gulch timber sale under HFRA, it will be a perfect example of how the agency is using the law simply to expedite approval of industrial logging projects.	The HFRA begins: An Act, “To improve the capacity of the Secretary of Agriculture and the Secretary of the Interior to conduct hazardous fuels reduction projects on National Forest System lands and Bureau of Land Management lands aimed at protecting communities, watersheds, and certain other at-risk lands from catastrophic wildfire, to enhance efforts to protect watersheds and address threats to forest and rangeland health, including catastrophic wildfire, across the landscape, and for other purposes.”

		See response to comment 11-g.
11-k	<p>According to HFRA itself, however, the Bugtown Gulch timber sale does not appear to fall under any category of Authorized Fuel Reduction treatments outlined at Section 102 of Title I. Indeed, while the USFS seems to believe that authorization is appropriate to address a the potential for a future insect “epidemic,” HFRA only authorizes such treatments if the “epidemic” exists in the first place and if it “poses a significant threat to an ecosystem component, or forest or rangeland resource.” Section 102(a)(4). The DEIS does not indicate a “significant” threat to an ecosystem component or forest or rangeland resource exists, nor does it indicate an insect epidemic even exists. Furthermore, the DEIS does not explain how the USFS is assessing “significance” in the context of HFRA.</p>	<p>An insect epidemic is currently occurring within the project area and this has been determined as posing a significant threat to ecosystem components. Refer to Appendix G of the EIS.</p> <p>Information is provided in the letter in Appendix G, as well as throughout the EIS, regarding the intensity of the current epidemic and the expected resource impacts. The epidemic is well documented as actively increasing and the threat of ecosystem components is imminent. The project area contains much private land and is approximately 5 miles west of the City of Custer, SD.</p>
11-l	<p>Of particular concern is that the DEIS entirely fails to explain what defines an “epidemic” in the context of naturally cyclic beetle populations within the BHNF. This is of particular concern because the DEIS indicates that mountain pine beetle populations in the BHNF are not only natural, but that populations naturally rise and fall. The DEIS states, “The beetle has always been a part of the Black Hills forest ecosystem, with epidemics occurring periodically.” DEIS at 52. There is no information provided to suggest that the current beetle infestation within the project area is “unnatural” or other wise outside the range of natural variability of the BHNF, thus posing an “epidemic” threat to the forest. The USFS seems to be claiming an unnatural “epidemic” exists simply to justify industrial logging in the Bugtown Gulch timber sale area.</p>	<p>In its simplest form, an epidemic is when mortality is above and beyond normal background mortality. In the Black Hills, endemic mortality levels are considered to be less than 1 tree per acre per year (see page xx of the EIS). Outbreaks are considered to be more than 1 tree, but less than 10 percent of a stand affected over a 3 year period. In the Bugtown Gulch area, whole stands of pine are experiencing complete mortality in some areas and this landscape is at imminent risk for widespread mortality. An insect epidemic is currently occurring within the project area and this has been determined as posing a significant threat to ecosystem components. Refer to Appendix G of the EIS.</p> <p>There is no claim that this epidemic is “unnatural”, only that it exists and poses a significant threat.</p> <p>See response to comment 11-k.</p>
11-m	<p>The USFS’s claims that any “epidemic” may pose significant threats to ecosystem components, or forest or rangeland resources are further unsupported. The DEIS fails to provide any analysis or assessment of the affected environment that would provide any context for the USFS’s claim that a significant threat may exist currently, or in the future. If anything, the DEIS indicates that wildlife, wildlife habitat, and other resources will suffer as a result of the timber sale. Indeed, the USFS is proposing to amend wildlife protection standards in the BHNF Revised LRMP to authorize the logging. Furthermore, the USFS seems only to claim that resources may be threatened in the future, yet provides no support for this arbitrary statement. Given that insects and tree mortality are natural forest processes that provide benefits for the health of the BHNF, the USFS cannot simply assert that a threat to resources exist without first balancing the benefits of insect infestations with any perceived disadvantages.</p>	<p>Refer to responses to comments 11-k and 11-l.</p> <p>Please refer to the Wildlife section of Chapter 3. The analysis shows that species which utilize green, moderately dense to dense forests are most impacted by the no action alternative rather than the action alternatives. While snag associated species will benefit the most from the no action alternative, there will also be ample snag habitat provided in the action alternatives as well.</p> <p>A nonsignificant Forest Plan amendment is proposed in the Preferred Alternative (Alt 2). This amendment would allow for a one time change in habitat effectiveness guidelines in the 5.4 Management Area (10% of the project area). For more information on the proposed amendment see pages 17-19 and 113-116 of this EIS.</p>

11-n	<p>Of greatest concern, however, is that there is no indication that the proposed treatments will do anything to control and/or suppress existing beetle infestation, prevent future infestations, or reduce fire risk. Of particular concern is that the DEIS discloses that extensive logging and thinning have already occurred in the Bugtown Gulch timber sale area, making it difficult to believe that more logging and thinning will do anything to control insects. The USFS provides no information suggesting that, following the proposed treatments, beetle populations will measurably decrease, will cease to infest other forested areas, or will disappear altogether.</p>	<p>The treatments will reduce stands susceptibility to beetles by reducing the density of stands. This will create conditions less favorable to beetles. This method of prevention has been effective in the Black Hills as a whole and in the Bugtown area as well. Two small sales occurred in 2004/2005, Elliott and Bear, in the most heavily infested areas of the project area. Field review in 2005 of the area thinned in these sales showed none of the residual trees being infested. Additional indication of the effectiveness of thinning comes from a private landowner within the Bugtown Gulch area, see comment 5-d. Further, in the project area, the beetle infestations are concentrated in stands which have a high risk rating or are more dense. Field surveys in this project area note that beetle mortality is occurring within stands 11-12 inches in diameter with 100 + square feet of basal area. Additional information on MPB is provided in the Entomology section of Chapter 3 and in Entomology reports prepared for this project.</p> <p>Refer to the discussion on expected fuel models and associated fire behavior under each alternative in the Fuels section of Chapter 3.</p>
11-o	<p>Further, no information is provided that remotely suggests fire risk will be measurably reduced following the proposed treatments. Indeed, there is no indication that the current conditions are beyond the range of natural variability for the BHNF or that, in the event of a fire, forest resources would be threatened and/or impacted to a degree not naturally experienced. As a baseline, the range of natural variability of the BHNF is a good reference for assessing the significance of the risks of fire and/or beetles to forest resources and we request the USFS assess such risks in the context of the range of natural variability of the BHNF. If the USFS does not believe this methodology to be reasonable and/or of utility, we request the agency fully explain its rationale for dismissing such a scientifically valid method of assessing forest health.</p>	<p>The project would not measurably impact the potential for fire starts, or ignition. However, the proposed treatments would reduce fire behavior, if a fire were to occur. Refer to the Fire and Fuels Section of the EIS in Chapter 3. The adjacent Jasper fire, the largest fire in recorded Black Hills history, occurred on a landscape very similar to the project area with several notable exceptions. The Bugtown Gulch area contains a multitude of private land and the beetle epidemic is creating standing dead fuels throughout the area.</p> <p>While stand replacing fires are natural occurrences, large scale stand replacing fires result in resource and socioeconomic impacts. The proposal for treatments in this project area has considered these impacts and suggests that responsible management in this area should strive to reduce the potential for large scale, high intensity wildfire.</p> <p>Parrish et al. (1996) and Shinneman and Baker (1997) discuss the range of natural variability for the Black Hills National Forest both historically and presently. Covington et al. (1994) and Covington and Moore (1992) discusses post settlement changes in natural fire regimes (ponderosa pine ecosystems). All of these documents present recommendations along with discussions on problems implementing restoration to historical forested conditions.</p>
11-p	<p>Finally, at the least, it is unclear how the proposed salvage treatments do anything to reduce any purported significant risk to an ecosystem component. By all measures, salvaging timber already killed by mountain</p>	<p>You are correct that salvaging timber does not provide any suppression or prevention related to MPB. It does however, reduce fuel loadings.</p>

	<p>pine beetles does not seem to do anything to reduce the risk of insect infestations. As the USFS is pushing forward with the Bugtown Gulch timber sale as a authorized project under Section 102(a)(4) of the HFRA, which refers to conditions related to insect epidemics, not fire risk, the agency’s proposal to conduct salvage logging of mountain pine beetle killed trees appears inappropriate under the agency’s cited authorities. Perhaps if the Bugtown Gulch timber sale was authorized under another part of the HFRA, salvage logging may be appropriate. However, as the USFS is clearly pursuing the timber sale under Section 102(a)(4), salvage logging cannot authorized.</p>	<p>Projects under Section 102(a)(4) of the HFRA are ‘Hazardous Fuel Reduction’ projects. Under the selected section, these fuel reductions occur on lands where an insect epidemic occurs.</p>
<p>11-q</p>	<p>We question the USFS’s assumption that simple reductions in stand density will reduce mountain pine beetle risk on the BHNF and in the Bugtown Gulch 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:</p> <p>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).</p> <p>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.</p>	<p>The paper cited (Schmid et al 1991) is concerned with water potentials of ponderosa pine growing in the Black Hills. It presents the possibility that other conditions, such as drought, and not solely stand density, may be a factor in MPB outbreaks. What is known about beetle outbreaks is that stand density and tree size are directly related to MPB outbreaks. We agree that other factors may contribute to MPB outbreaks and are not based “solely” on stand density. See project file for further discussion on this topic.</p> <p>See responses to comment 11-m and 11-n.</p>
<p>11-r</p>	<p>We are very concerned that the USFS is proposing to directly impact and reduce the availability of old growth forest habitat through the Bugtown</p>	<p>Late Succession Forest is discussed in the FEIS. There is no late succession habitat within the project area at this time. The existing and proposed stands to</p>

	<p>Gulch timber sale. No old growth currently exists in the timber sale area and the USFS recently disclosed in the Draft EIS for the Phase II Amendment to the BHNF LRMP that only 2,646 acres of ponderosa pine in the entire BHNF are in structural stage 5, a decline of nearly 20,000 acres from what was disclosed in the 1997 BHNF LRMP. This amounts to only 0.22% of the entire BHNF. See, Phase II DEIS, Table 3-6 at 3-11 – 3-12; see also, Figure below (note: this figure is based on older data and indicates only around 1.5% of the BHNF is old growth; we have yet to update this map to reflect the fact that only 0.22% of the BHNF is old growth. The figure is nonetheless illustrative of the scarcity and fragmentation of old growth forest). This was measured by assessing how much forest is currently in structural stage 5, which the 1997 Revised BHNF LRMP defines as old growth. Furthermore, old growth in the BHNF exists as scattered, small stands that are neither connected nor of sufficient size to support many wildlife species.</p>	<p>be designated for late succession management can be found in Appendix A, map 15, of this EIS.</p> <p>None of the alternatives analyzed would negatively affect SS5 forest-wide. Moreover, the action alternatives propose to change which stands are designated for late succession management. This change is proposed to improve the quality of designated stands. See pages 84-86 of the FEIS.</p> <p>As these designated stands within the project area are managed for late successional objectives over time they will contribute to the SS5 component forest-wide.</p> <p>Vegetative diversity in terms of species composition, structure, and Late-successional stands are included as monitoring items (i.e. 7a, 7b, and 8) in the Monitoring Implementation Guide (USDA Forest Service 2003a, 2004) and are monitored Forest-wide as directed by the Forest Plan. These annual Monitoring and Evaluation Reports are available (USDA Forest Service 1998-2005).</p>
11-s	<p>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.</p>	<p>This project will not directly impact late succession forest (old growth). See response to comment 11-r.</p>
11-t	<p>Of particular 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 Bugtown Gulch timber sale. It also indicates the USFS failed to adequately analyze and assess the cumulative impacts of the Bugtown Gulch timber sale to developing old growth forest.</p>	<p>In no way does the proposed action assume that the entire ponderosa pine forest of the BHNF is naturally “open and park-like”. Refer to the purpose and need for action presented in Chapter 1 of the EIS.</p> <p>The direct, indirect and cumulative effects to late succession forest is discussed on pages 84-86 of the EIS. ‘</p>
11-u	<p>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,</p>	<p>We recognize that differing opinions exist regarding whether the forest structure was denser, more diverse and affected by relatively infrequent, stand replacing fires versus more open and subject to more frequent fires. The analysis performed for this project does not assume the entire project area falls within a low-severity fire regime. This area is classified as Fire Regime Group one which is characterized as having low to mixed severity fires. This is based on Fire Regime Condition Class modeling which is a relatively new method for</p>

	<p>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:</p> <p>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)</p> <p>Schoennagle et al. (2004) state:</p> <p>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).</p> <p>Historically, forests that experienced mixed-severity fire regimes had variable densities of ponderosa pine, Douglas fir, grand fir, and 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).</p>	<p>such classification being used Nationally by the Forest Service.</p> <p>See response to comment 11-h.</p>
11-v	<p>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:</p> <p>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</p>	<p>See Agency Response to letter 11, comments h and u; we recognized in the EIS that diversity in structure and fire regimes exists in this area.</p>

	<p>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.</p>	
11-w	<p>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. In fact, 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.</p>	<p>See Agency Response to letter 11, comments h and u; we recognized in the EIS that diversity in structure and fire regimes exists in this area.</p>
11-x	<p>In other works, the USFS relies 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.” This reliance is suspect as Peter Brown’s dissertation suggests otherwise. Indeed, Brown (2003) states:</p> <p>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. Infrequent stand-replacing fires also occurred and apparently resulted in large landscapes of even-aged trees. (p. 61, emphasis added)</p> <p>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.</p>	<p>See Agency Response to letter 11, comments h, t and u; we recognized in the EIS that diversity in structure and fire regimes exists in this area and do not claim or assume the entire Black Hills was open and park-like..</p>
11-y	<p>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:</p> <p>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</p>	<p>The disagreements of the quoted studies are noted.</p> <p>Refer to responses to comments 11-h and 11-u.</p>

	the magnitude of control of forest structure by fire relative to present conceptions of fire's importance in ponderosa pine forests. (p. 1223)	
11-z	The USFS, especially through the Bugtown Gulch DEIS, 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.	The proposed actions do meet the purpose and need, see response to comment 11-e, 11-n and 11-o. The DEIS's resource management actions are responsive to current Forest Plan goals and objectives, as well as the National emphasis for fire/fuels hazard reduction. The Forest Plan EIS determined that achieving pre-settlement conditions (including fire processes) was not compatible with other Plan Goals and Objectives.
11-aa	Regardless, Peter Brown's research on the Limestone Plateau and other areas in the Black Hills are but one piece of scientific information the USFS should be using to objectively evaluate whether or not. Obviously, the BHNF is much more diverse than the USFS gives it credit, experiencing both surface and 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.	See response to comment 11-h and 11-u.
11-bb	<p>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 Bugtown Gulch 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 Bugtown Gulch 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 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 (Veblen 2003)" (p. 671, emphasis added). The authors go on to state:</p> <p>Fuel-reduction treatments (mechanical thinning and prescribed burning) may effectively reduce fire severity under moderate weather conditions, but these treatments may not effectively mitigate fire behavior under extreme weather conditions and may not restore the natural complexity of historical stand and</p>	<p>Refer to response to comment 11-e, 11-n, 11-u, 11-o</p> <p>We agree that the proposed treatments may not mitigate fire behavior under extreme weather conditions.</p>

	landscape structure. (p. 673, emphasis added).	
11-cc	Coupled by 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 Bugtown Gulch 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.	<p>Fuels reduction treatments must be consistent with EIS design criteria, Forest Plan standards and guidelines, and include close consultation with district wildlife biologists and other resource specialists thru all phases of project development and implementation.</p> <p>All MIS species are discussed in the FEIS. Evaluation of effects of the alternatives to R2 Sensitive Species is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in the DEIS, in Appendix D.</p> <p>Refer to the discussion on expected fuel models and associated fire behavior under each alternative in the Fuels section of Chapter 3.</p>
11-dd	All in all, the DEIS and Deerfield 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.	<p>The purpose and need for action is explained in Chapter 1 of this EIS.</p> <p>Refer to response to comment 11-e, 11-h, 11-m, 11-n and 11-q.</p>
11-ee	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 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?	<p>There will be no direct or indirect impacts to late successional forest as a result of any alternative because no late succession exists within the project area. Therefore, no cumulative effects would occur to late succession habitat either. The EIS discusses the expected impacts to stands designated for late succession management and the potential for development of late succession conditions in the future.</p>
11-ff	Of particular concern is that since only 0.22% the BHNF, direct, indirect, and cumulative impacts to developing old growth could jeopardize wildlife populations. Indeed, in relation to the northern goshawk, the USFS reported in the 2000 Expert Interview Summary for the Black Hills National Forest Land and Resource Management Plan Amendment that, "If the Forest is close to 5 percent or less in late succession as the Management Area map indicates, the effect will be more negative (Squires)." Expert Interview Summary at 77. In relation to the Lewis's woodpecker, the USFS reported in the Expert Interview Summary that, "Saab specifically stated that managing 5 percent of the Forest as late succession may not be enough for long-term persistence of the Lewis's woodpecker." Expert Interview Summary at 88. Finally, the USFS reports in the Expert Interview Summary, "Anderson, Rumble and Saab were unified that the black-backed woodpecker requires a higher percentage of old growth than the Forest Plan	<p>The analysis of effects on the northern goshawk and black-backed woodpecker (R2 Sensitive species and MIS) are discussed in the EIS, Chapter 3, the Bugtown Gulch Wildlife Specialist Report and the Bugtown Gulch BA/BE. The Lewis' woodpecker (R2 Sensitive species) is discussed in the Bugtown Gulch BA/BE. All MIS species are discussed in the FEIS.</p> <p>The EIS does not claim that late succession, or old growth, exists in the project area. See response to comment 11-ee.</p>

	would provide.” Expert Interview Summary at 87. The USFS’s failure to recognize that 0% of the Bugtown Gulch timber sale area and only 0.22% of the entire BHNF is in old growth condition according to the BHNF LRMP FEIS and assess impacts in the context of these figures indicates the agency has further failed to adequately analyze and assess impacts to old growth dependent wildlife, including northern goshawk and black-backed woodpecker. The DEIS’s conclusion that sufficient old growth habitat exists and will remain for wildlife as a result of the Bugtown Gulch timber sale is fatally flawed.	
11-gg	Regardless of the BHNF’s assumptions about old growth on the Black Hills, it is undeniable that the Bugtown Gulch timber sale will have 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 are also important given that scientific studies have determined the Black Hills once naturally supported more old growth forest, especially in the Northern Hills where the climate is more moist (see e.g., Shinneman and Baker 1997, Baker and Ehle 2001).	The EIS discusses the impacts the alternatives would be expected to have on currently dense stands and the potential for old growth to develop in the future. The no action alternative is expected to have the greatest negative impact on existing dense, mature stands as well as the potential for late succession to develop in the future.
11-hh	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 Bugtown Gulch timber sale.	Viability is demonstrated through other means besides population numbers. The project would adhere to FP Standards and Guidelines. Species viability has been assessed at the Forest level. The LRMP and Phase I Biological Evaluations demonstrated that species viability exists and that as long as projects, such as Bugtown, stay with the context of FP S&G’s there would not be a loss of viability for any sensitive species.
11-ii	Additionally, the DEIS fails to even explain whether a viable population of marten, goshawk, northern leopard frog, three-toed woodpecker, Black Hills red-bellied snake, and/or black-backed woodpecker 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 or 2001 Phase I Amendment explain what constitutes a viable population of marten, goshawk, northern leopard frog, three-toed woodpecker, Black Hills red-bellied snake, and/or black-backed woodpecker 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 Bugtown Gulch timber sale will not jeopardize the viability of these species (see also, FSM 2672.1).	Species viability is addressed at the Forest planning level (36 CFR 219.10) The FEIS includes numerous references to population and habitat trend and viability determination are supported by reference to various studies. See FEIS MIS section and the Bugtown Gulch BA/BE. Refer to response to comment 11-hh.
11-jj	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	Refer to response to comment 11-hh.

	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.	
11-kk	The analysis of impacts to northern goshawk appears lacking. For instance, while the DEIS recognizes that fires have cumulatively burned almost 400,000 acres of the 1.2 million acre BHNF, nowhere does the DEIS analyze and assess the impacts of past, especially more recent, fires to the northern goshawk and its habitat. We are very concerned that fires have limited the availability of nesting habitat and that the Bugtown Gulch timber sale, in cutting 47,000,000 board feet of timber and amending goshawk protection measures through the Forest Plan, could pose significant cumulative impacts to goshawk nesting habitat.	<p>The Bugtown Gulch EIS discusses the impact of recent fires, in particular the recent year 2000 Jasper fire. Refer to the Goshawk discussion in Chapter 3 of the EIS.</p> <p>The EIS does not propose to amend the Forest Plan in regard to goshawk protection measures. The EIS does not propose to cut 47 mmbf of timber, rather it proposes to harvest approximately 24.9 mmbf.</p>
11-ll	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.	<p>All MIS species are discussed in the FEIS. Evaluation of effects of the alternatives to R2 Sensitive Species is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in the DEIS, in Appendix D.</p> <p>The Forest Plan establishes an Allowable Sale Quantity for the Forest.</p>
11-mm	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.	Forest level Allowable Sale Quantity (ASQ) and sustainability is more appropriately addressed at the Forest Planning level. These concerns are beyond the scope of the Bugtown Gulch Project analysis.
11-nn	We also question how the BHNF assessed impacts to northern leopard frog and Black Hills red-bellied snake? It is unclear whether Forest Plan Standard 3116 will be complied with. 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.	<p>The Bugtown Gulch BA/BE, available in the project file, discusses attainment of Forest Plan Standard 3116.</p> <p>No system road construction would occur under any alternative. Temporary roads would be closed following completion of any sale activity. There are no known Black Hills red-bellied snake hibernacula and project design would avoid creek/riparian areas. Therefore, standard 3116 would be met.</p>

		<p>In addition, <i>Standard 3115</i> would apply to red-bellied snake hibernacula, or other sensitive species, discovered during the project.</p> <p>The activities proposed in this project would not be expected to affect riparian areas (specifically breeding habitat for northern leopard frog). Currently there are no known leopard frog breeding sites within the project area.</p> <p>Additional information regarding these species can be found in the Bugtown Gulch Wildlife Specialist Report and the BA/BE. Both of these documents are available in the project file.</p> <p>Habitat for these species is closely tied to Forest Plan Goals and Objectives for wetlands, streams, and riparian habitats. Information regarding hydrology was discussed in the Watersheds, Geology, and Soils section and the Wildlife Section of Chapter 3: Riparian communities. For both species, all action alternatives provide design criteria (EIS, Appendix B) to protect these species habitats during management activities.</p>
11-oo	<p>The analysis and assessment of impacts to sensitive species, in particular the northern goshawk, black-backed woodpecker, and Lewis' woodpecker, 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 have likely impacted individuals of these species.</p>	<p>All MIS species are discussed in the FEIS, including the northern goshawk and black-backed woodpecker. Evaluation of effects of the alternatives to R2 Sensitive Species, including those mentioned in your comment, is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in Appendix D of the EIS.</p> <p>The Cumulative effects to the northern goshawk and black-backed woodpecker are discussed in the Cumulative Effects on MIS Species in the Wildlife Section of Chapter 3 of the FEIS, and in the Wildlife Specialist Report.</p> <p>Threatened, endangered and R2 Sensitive species, both plant and animal are included as monitoring items (i.e. 18 and 25) in the Monitoring Implementation Guide (USDA Forest Service 2003a, 2004) and are monitored Forest-wide as directed by the Forest Plan. These annual Monitoring and Evaluation Reports are available on line (USDA Forest Service 1998-2005)</p>
11-pp	Indeed, in virtually every biological evaluation prepared for every timber	Cumulative impacts to R2 Sensitive species as a result of proposed activities

	<p>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.</p>	<p>within the Bugtown Gulch Project area analysis are evaluated in the Bugtown Gulch BE/BA. Cumulative effects to sensitive species which are also MIS can also be found on pages xxx of this EIS.</p> <p>Species viability is addressed at the Forest planning level (36 CFR 219.10)</p> <p>Threatened, endangered and R2 Sensitive species, both plant and animal are included as monitoring items (i.e. 18 and 25) in the Monitoring Implementation Guide (USDA Forest Service 2003a, 2004) and are monitored Forest-wide as directed by the Forest Plan.</p>
11-qq	<p>Additionally, the USFS entirely fails to disclose the fact that stands subjected to shelterwood cuts under the Bugtown Gulch timber sale will likely experience overstory removal treatments in the near future. The DEIS is silent with regards to the effects of future logging, despite the fact that the USFS is clearly proposing implement three-step cutting methods, which invariably invite future logging.</p>	<p>There are no shelterwood cuts proposed in any of the alternatives.</p> <p>The potential for future logging was considered.</p>
11-rr	<p>It is unclear to what extent high quality sensitive plant habitat has been surveyed and/or to what extent such habitat will be protected. Furthermore, it is unclear how the BHNF assessed impacts to sensitive plant species and how the Forest overall concluded that impacting any sensitive plant species and their habitats would not jeopardize species viability on the BHNF.</p>	<p>The Bugtown Gulch BA/BE discloses that a botanical survey was conducted in the project area during October, November and December of 2004. Additional information on the survey has been added to the Final EIS. Refer to the botany section in Chapter 3. Previously recorded surveys were most recently conducted in 1995. Forest Service personnel and Forest Service contract personnel trained and experienced in plant identification completed all surveys.</p> <p>The Bugtown Gulch BA/BE evaluates the effects to sensitive plant species that occur or have potential habitat in the Bugtown Gulch Project Area. This BA/BE is available in the project file. A summary of the BA/BE, including Determinations made for each sensitive plant species potentially occurring in the project area, can be found in Appendix D.</p> <p>No Region 2 sensitive plant species have been located in the project area. Suitable habitat exists for 1 species and possible suitable habitat exists for 2 additional sensitive plant species. Design criteria is identified in Appendix B. The Final EIS clarifies and expands on botany related design criteria for protection of sensitive species.</p> <p>Threatened, endangered and R2 Sensitive species, both plant and animal are included as monitoring items (i.e. 18 and 25) in the Monitoring Implementation Guide (USDA Forest Service 2003a, 2004) and are monitored Forest-wide as directed by the Forest Plan.</p>

11-ss	<p>The DEIS fails to provide or reference population trend data for pygmy nuthatch, fringed myotis, and other MIS, despite clear regulatory direction requiring such information before making project-level decisions. Although the DEIS references some population data for birds monitored through the Rocky Mountain Bird Observatory, we can find no indication that this represents actual trend data. Furthermore, it is unclear to what extent the USFS has surveyed for pygmy nuthatch and other MIS within the project area. We request the USFS explain all efforts it has undertaken to ascertain the presence of MIS in the project area and what protocols were used to assess their presence and population trends where necessary.</p>	<p>Management Indicator Species are selected at the Forest Level based on the requirements of 36 CFR 219.10. The FEIS for the 1997 Revised Forest Plan (pages III-319-III-400) and the FEIS Phase I (89-146) gives a complete overview of MIS and the reasons why they are considered MIS under the amended Forest Plan.</p> <p>All MIS species which are discussed in the FEIS. Table 3.28, of the FEIS displays wildlife MIS selected for analysis. Available population trend data is displayed for each species.</p> <p>MIS are included as monitoring items (i.e. 18, 25, and 26) in the Monitoring Implementation Guide (USDA Forest Service 2003a, 2004) and are monitored Forest-wide as directed by the Forest Plan. These annual Monitoring and Evaluation Reports are available (USDA Forest Service 1998-2005).</p> <p>To ascertain the presence of MIS within the Bugtown Gulch Project Area, Pre-field review were completed using survey results, district records, available literature databases, the South Dakota Natural Heritage Database, and Black Hills National Forest Monitoring Reports (USDA Forest Service 1998-2005a). Field reconnaissance of the Bugtown Gulch Project Area was completed in the Fall/winter of 2004 and throughout 2005. Data and results of all surveys performed in the area can be found in District files.</p>
11-tt	<p>We also seriously question the USFS's analysis and assessment of impacts to brown creeper. According to Anderson and Crompton (2002), brown creeper avoid logged areas (by shelterwood cuts) and are sensitive to patch size. The DEIS makes no mention of this paper, its findings, or the inverse relationship between shelterwood logging and brown creepers, and their sensitivity to forest fragmentation.</p>	<p>There is no shelterwood cutting proposed in this project. Anderson and Crompton (2002) found that shelter-wood logging creates open forest conditions that are less favorable for the brown creeper as they observed that this species was "conspicuously less abundant in treated areas than in untreated stands. However the paper was not specific regarding before and after treatment basal areas, only that the shelter-wood timber harvest resulted in a 53% reduction in total tree basal area and a 58% reduction in canopy cover. While the Bugtown project does not propose shelter wood harvesting, treated stands could result in near similar reductions of basal area and canopy cover and could be expected to have a similar effect on this species. Based on this literature it can reasonably be assumed that habitat for this species will decline within the Bugtown project area, regardless of Alternative selected. Large diameter trees, where present, would be retained in areas thinned. Project design is expected to maintain suitable brown creeper habitat within the project area. The Bugtown project area is approximately 1% of the planning area where brown creeper habitat would also be available.</p> <p>The brown creeper conservation assessment (Wiggins 2005) was used because</p>

		the assessment provides a synopsis of technical information regarding the brown creeper. Much of the information regarding the brown creeper provided in Anderson and Crompton (2002) has been incorporated by other references (Wiggins 2005, Dykstra 1996) used to evaluate the effects of the alternatives on the brown creeper. Anderson and Crompton (2002) will be added to the project record.
11-uu	<p>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 (<i>Lasionycteris noctivagans</i>), Schmidt (2003b) states:</p> <p>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)</p> <p>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.</p>	<p>Requirements for “hard snags and soft snags”, which contribute to cavity nesters habitat Forest-wide are provided through FP standard and guidelines (treated as standards) 2301-2306. Analysis of snag numbers and diameters for the Forest Plan can be found in the 1997 FEIS on pages III-277-III-292. The EA for the Phase I amendment discusses the effects of current snag direction in Section 3-6 Wildlife Resources (page 97-149). All action alternatives comply with Forest Plan direction for snags.</p> <p>Snags and down wood material are included as a monitoring item (i.e. 9) in the Monitoring Implementation Guide (USDA Forest Service 2003a, 2004) and are monitored Forest-wide as directed by the Forest Plan. These annual Monitoring and Evaluation Reports are available on line (USDA Forest Service 1998-2005).</p> <p>The issue of the inadequacy of the Forest Plan direction for snags is outside the scope of the Bugtown Gulch Project analysis.</p> <p>Bat species which are MIS are discussed in Chapter 3 of this EIS. Additional information is provided in the Wildlife Specialist Report and the BA/BE. The silver-haired bat is neither an MIS or an R2 Sensitive Species and therefore not specifically addressed in the EIS.</p>
11-vv	<p>Snag diameters on the BHNF are extremely low and are already insufficient to meet the needs of wildlife (Spiering and Knight 2005). Spiering and Knight (2005) concluded “Our data confirm that on the BHNF the number of large diameter snags is well below the proposed USDA Forest Service standards for the retention of snags” (p.47). The existing conditions indicate that not only is the USFS failing to meet snag retention standards, but 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,</p>	<p>Spiering and Knight (2004, 2005) did find that large-diameter snags > 15” DBH, average density per acre .7 and that 3.3% of 2937 snags forest-wide were in this class with a mean height of 19.8 ft. Spiering and Knight (2004, 2005) found that snags are important for cavity nesting birds and occur at low densities in the Black Hills, but found that the presence of cavity nesting bird use was independent of snag density. Lentile et al. (2000) indicate that snag density tends to correlate with overall stand density. This study was conducted in unmanaged stands. Both Spierling and Knight (2004, 2005) and Lentile et al. (2000) papers indicated that forage and cavity use by wildlife increases with</p>

	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. [See Project File for Original letter containing charts and graphs referenced in Letter 11 comments]	snag size, although small diameter snags <9” are found in more abundance. However, wildlife use of snags were not limited to >15” DBH. The existing mountain pine beetle epidemic which is occurring in the project area is extensive, resulting in high levels of mortality. Refer to the Entomology Section of Chapter 3. Given the current and increasing numbers of snags resulting from mountain pine beetle caused mortality in the project area, all alternatives are consistent with FP direction for snags. Further discussion of snags is presented on in the EIS and in the Wildlife Specialist Report. See response to comment 7-m.
11-ww	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.	See response to comment 7-k, 7-m and 11-vv. All MIS species are discussed in the FEIS. Evaluation of effects of the alternatives to R2 Sensitive Species is found in the Bugtown Gulch BA/BE. Determinations for R2 Sensitive species are summarized in Appendix D of the EIS.
11-xx	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 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).	See Agency Response to comment 11-ss. Pettingill and Whitney (1965) identified the pygmy nuthatch’s status as uncertain, probably rare to uncommon resident which is still indicated in Tallman et al. (2002). Population fluctuations have been noted in Peterson (1993) and Tallman et al (2002).
11-yy	Even under the USFS’s liberal and unsupported estimate that snags greater than 15” dbh average 1.63 per acre, 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 higher snag densities than 1.63 per acre.	See response to comments 11-ss, 11-uu, and 11-vv. The silver-haired bat, American kestrel are not considered a R2 Sensitive Species nor MIS species under the amended revised forest Plan (1997, 2001), therefore these species were not specifically addressed in the EIS.
11-zz	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 as it is contradictory to peer-reviewed scientific research. 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	See response to comment 7-m, 11-ss, 11- uu and 11-vv. Species viability is addressed at the Forest planning level (36 CFR 219.10) The Bugtown Gulch project meets Forest Plan direction for snags. Refer to the

	<p>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.</p>	<p>snag discussion in Chapter 3 of this EIS.</p>
<p>11-aaa</p>	<p>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 USFS has disclosed that, in total, live 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 snags, some of the problems may be solved, this is not what happens in reality. In reality, mortality is a slow process. We have seen estimates in project-level environmental assessments 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.</p>	<p>Refer to response to comment 7-k, 7-m</p>
<p>11-bbb</p>	<p>As it is, the USFS intensively manages the BHNF and the Bugtown Gulch timber sale will exacerbate snag habitat deficits. One goal of the Bugtown Gulch 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. Spiering and Knight (2005) concluded that, “it appears that managing for large snags, possibly through increased snag retention, longer rotation cycles, or killing large live trees to create snags, is the best way to improve habitat for cavity-nesting birds in managed ponderosa pine stands” (p. 50). The Bugtown Gulch timber sale fails to implement any of these recommendations, indicating the timber sale fails to meet Forest Plan requirements related to large diameter snags, as well as fails to meet the needs of wildlife, especially cavity nesting birds. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to</p>	<p>Yes, reducing tree mortality is definitely a goal of this project. The project area is facing the potential for large scale beetle caused mortality across the landscape due to the existing beetle epidemic. There is not a lack of snag creation within the project area and therefore additional measure to create snags is not included with this project.</p> <p>See responses to comments 7-k, 7-m, 11-uu, 11-vv</p>

	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 moreso). Ultimately, the timber sale is a recipe for further reductions in already much-reduced large diameter snag densities for decades to come.	
11-ccc	<p>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:</p> <p>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).</p>	<p>Refer to responses on comments 7-k, 7-m, 11-uu, 11-vv</p> <p>All MIS species are discussed in the FEIS. Evaluation of the effects of the alternatives to R2 Sensitive species is found in the Bugtown Gulch BA/BE. Determination from the BA/BE can be found in Appendix D of this EIS.</p>
11-ddd	<p>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. (2002) estimate that snags in the BHNF greater than 10" dbh average only 3.96 per acre. 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.</p>	<p>All MIS species are discussed in the FEIS. Evaluation of the effects of the alternatives to R2 Sensitive species is found in the Bugtown Gulch BA/BE. Determination from the BA/BE can be found in Appendix D of this EIS.</p> <p>See responses to comments 7-k, 7-m, 11-uu, 11-vv.</p>
11-eee	<p>Indeed, as can be seen by the above table, several species require snag densities to be greater 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. (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.</p>	<p>The sharp-shinned hawk and Cooper's hawk are not considered an R2 Sensitive species nor an MIS. Therefore, this species is not specifically addressed in the Project Analysis. Design criteria will protect all known raptor nest locations (Appendix B).</p> <p>Challenges to Forest Plan direction is outside the scope of this project.</p> <p>All MIS species are discussed in the FEIS. Evaluation of the effects of the alternatives to R2 Sensitive species is found in the Bugtown Gulch BA/BE. Determination from the BA/BE can be found in Appendix D of this EIS.</p> <p>Refer to responses to comments 7-k, 7-m, 11-uu, 11-vv</p>
11-fff	Of more concern, however, are the extremely low densities of large diameter	All MIS species are discussed in the FEIS. Evaluation of the effects of the

	<p>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).</p>	<p>alternatives to R2 Sensitive species is found in the Bugtown Gulch BA/BE. Determination from the BA/BE can be found in Appendix D of this EIS.</p> <p>Refer to responses to comments 7-k, 7-m, 7-q, 11-uu and 11-vv.</p>
11-ggg	<p>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 DEIS discloses that, in total, live 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 snags, some of the problems may be solved, this is not what happens in reality. In reality, mortality is a slow process.</p>	<p>Refer to response to comments 7-k, 7-m, 11-uu and 11-vv</p>
11-hhh	<p>As it is, the USFS intensively manages the BHNF and the Bugtown Gulch timber sale will exacerbate snag habitat deficits. Ultimately, the timber sale is a recipe for further reductions in already much-reduced large diameter snag densities for decades to come.</p>	<p>Refer to comments 7-k, 7-m, 11-uu and 11-vv</p>
11-iii	<p>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.</p> <p>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. 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. (2000), logging and thinning significantly reduce snag longevity. Based on simple math, Brademeyer found that, based on the data in Lentile et al. (2000), snag</p>	<p>The Bugtown Gulch EIS does not claim that snag persistence averages 15 years. Lentile et. al. (2000) study findings indicated that snags on average persisted 15 years, but that variability among sites is evident.</p> <p>Thank you for attaching Mr. Brademeyer’s declaration that explains his methodology and analysis of Lentile et al. 2000 work. Comment noted and considered.</p>

	<p>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. [See Project File for Original Letter (11) containing attachments].</p>	
11-jjj	<p>Because the USFS assumes uniform snag persistence across the BHNF, the agency is relying on flawed assumptions with regards to the Bugtown Gulch 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.</p>	<p>The Bugtown Gulch project meets all Forest Plan direction relative to snags.</p> <p>Refer to responses to comments 7-k, 7-m, 11-uu, 11-vv and 11-iii,</p>
11-kkk	<p>Additionally, will safety hazard snags be logged? If so, we request the BHNF consider an alternative that, instead of cutting safety hazard snags, leaves a forested buffer around these snags equal to or greater than the height of the snag. This will address the need to retain existing snags for wildlife, especially in light of widespread snag shortages.</p>	<p>OSHA requires that safety hazard trees be removed to protect forest workers. The determination of what constitutes a safety hazard tree is somewhat subjective, but is based on the potential imminent threat to forest workers. In general practice, few snags are removed as hazard trees. Design criteria for this project requires that snags which are removed as hazard trees are to remain on site for down woody material.</p>
11-lll	<p>Although the DEIS discloses that all streams are meeting their beneficial uses in the timber sale area, we question how much monitoring has actually been done? Furthermore, although the South Dakota Department of Environment and Natural Resources (“DENR”) may claim that streams are not impaired, we question to what extent water quality has been monitored within the Bugtown Gulch timber sale area and to what extent concerns have been expressed by DENR over watershed health in the timber sale area.</p>	<p>As stated in the Watershed Specialist Report, under Field Surveys, most of the USGS blue line streams were visited in the field. The field surveys identified Connected Disturbed Areas (CDA), stream type and watershed problem areas. If there were problems noticed during the surveys, they were noted and cause or fix identified. DENR has not notified us of any watershed health concerns in the Bugtown Gulch Planning area. Refer to Map 18 in Appendix A to view perennial stream reaches within the project area.</p>
11-mmm	<p>Regardless, the BHNF is obligated under the Clean Water Act to fully comply with water quality standards. Nowhere in the Clean Water Act does</p>	<p>As stated in the BMP Effectiveness section of the Watershed Specialist Report, Final Report, Best Management Practices (BMP) are developed by the State of</p>

	<p>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 Bugtown Gulch timber sale.</p>	<p>South Dakota to ensure compliance with federal and state water-quality standards. With the implementation Bugtown Gulch Project, Forest Plan Management Requirements, WCPs and BMPs will be prescribed and implemented. Specific Design Criteria are listed in Appendix B of the DEIS. The Watershed Specialist Report for Bugtown Gulch also list Management Requirements and Design Criteria in a section of the report and Forest Plan Management Requirements in Appendix A. This will protect the water quality of the streams and creeks in the project area and the activities that are planned for in the Bugtown Gulch project will meet the requirements of the Clean Water Act. BMP Implementation monitoring and effectiveness monitoring will ensure this. Refer to Map 18 in Appendix A to view perennial stream reaches within the project area.</p>
11-nnn	<p>To this end, it is unclear the extent to which the USFS has conducted and/or will conduct baseline stream health surveys within the Bugtown Gulch 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 Bugtown Gulch 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. Before any decision to authorize the timber sale is made, stream health must be assessed in accordance with the WCPH and the BHNF Forest Plan.</p>	<p>Informal surveys were completed during the field surveys of the area, where most USGS blue line streams were visited. At this time CDAs were identified, stream type noted and watershed problem areas identified. The few problem areas identified were generally CDAs in isolated areas. In Chapter 3 of the DEIS and in the Watershed Specialist Report the waters that have beneficial uses assigned to them are listed. These streams have certain water quality standards that must be met in order for the stream to meet there assigned beneficial uses. As stated in the Watershed Specialist report, "All streams within the Bugtown Gulch project area are currently meeting their assigned beneficial uses." Stream health is generally not an issue in the Bugtown Gulch project Area. Management actions will not impact the stream patterns, geometry or habitats. T-WALK is a good assessment tool but it is not a good monitoring tool because it is not repeatable. Professional judgment is used to assess stream condition backed with years of experience over many regions. Streams are not abundant in the project area. Refer to Map 18 in Appendix A to view perennial stream reaches within the project area.</p>
11-ooo	<p>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 protect 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, such as from domestic livestock grazing and off-road vehicle use, already experienced by watersheds throughout the BHNF. There is no indication that BMPs have been shown to be</p>	<p>A BMP Effectiveness discussion has been added to Appendix H and includes results of recent (2005) monitoring on the Hell Canyon Ranger District and National Forest</p>

	effective on unstable soils and/or other unique environments.	
11-ppp	<p>The DEIS claims that cumulatively, soil disturbance would remain below 15% of any land unit within the Bugtown Gulch timber sale area. The DEIS fails to provide any</p> <p>The DEIS also indicates that, cumulatively, cattle grazing is affecting soils and waters. Unfortunately, no information or analysis is presented and/or referenced showing that, when combined with the effects of the Bugtown Gulch timber sale, grazing and off-road vehicle use will not significantly impact soils and waters, will comply with the Forest Plan, and will comply with any and all other relevant laws and regulations relating to the protection of soil and water resources.</p> <p>The DEIS clearly 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 Bugtown Gulch timber sale area. We request the USFS take a hard look, as is required, at how livestock grazing and off-road vehicle use have affected and will affect soils and waters within the timber sale area.</p>	<p>Note that this comment is copied here verbatim.</p> <p>Please refer to Appendix H for more information on BMP effectiveness and recent monitoring results which support the determination that this project will meet Forest Plan standard 1103 in regard to soil disturbance. The Bugtown Gulch project is not expected to impact the soils and waters. As stated in the DEIS, “The potential to generate sediment would be very low, especially with the small amount of acres being treated within the WIZ. With implementation of the FPS&G (Forest Plan Standards and Guidelines), which include WCPs and BMPs such as minimizing skid trails in the WIZ, and the small amount of acres to be treated in the WIZ, very little sediment would be generated.” The DEIS goes on to say,” Maintenance and temporary use of roads within the WIZ and at stream crossings would also have the potential to produce sediment. There are 0.6 miles of road within the WIZ on Forest lands. With the implementation of the FPS&G, which include WCPs and BMPs, the amount of sediment would be expected to be minimal and should not have an impact on the aquatics.” Under the cumulative effects section the DEIS states, “Overall the cumulative impacts from sediment would be reduced over existing conditions if no wildfires occurred.” This is a portion of the analysis and more details can be found in the Watershed Specialist Report.</p> <p>A detailed analysis of the cumulative impacts has been completed in the Watershed Specialist Report. Timber, fire, grazing, ownership and roads, including off road use, were looked at in detail, refer to Appendix E in the EIS for a listing of past, present and future activities considered in the analysis.</p>
11-qqq	<p>Additionally, in relation to cumulative watershed impacts from any potential future fire, the USFS entirely fails to analyze and assess how roads exacerbate erosion and runoff after forest fires. Indeed, the USFS has noted that, in many cases, roads contribute to unnatural runoff after fires and in many cases create erosion hazards that would not naturally exist.</p>	<p>As stated in the DEIS under Alternative 1, “There would be no overall change in sediment being delivered to the streams unless a wildfire occurred, which could deliver a large amount of sediment to the channels.” This is true with or without roads and the effects vary by alternative. If a wildfire does occur, the time to look at the roads is during the Burned Area Emergency Rehabilitation (BAER) process.</p> <p>Road were considered in the cumulative effects analysis, refer to Appendix E. No new system road construction will occur.</p>
11-rrr	<p>The DEIS entirely fails to address the cumulative impacts of the proposed Forest Plan amendments affecting big game habitat on the BHNF. Of particular concern is that the impacts of past, present, and reasonably foreseeable Forest Plan amendments affecting big game summer and winter habitat on the BHNF were not addressed at all in the DEIS. Courts have...</p>	<p>Cumulative effects of proposed actions and amendments are analyzed for each resource in Chapter 3 of the FEIS.</p>

	<p>The USFS thus has a clear duty under NEPA to analyze and assess the cumulative impacts of forest plan amendments that affect similar standards and/or guidelines at the forest level to ensure that the cumulative impacts are appropriately considered and minimized.</p>	
11-sss	<p>In the last three years, the USFS has amended Forest Plan big game habitat standards, including habitat effectiveness values, at least twice. Furthermore, the USFS is proposing at least one amendment related to big game winter habitat within the next year:</p> <p>Through a March 10, 2003 decision, Hell Canyon District Ranger Mike Lloyd amended the BHNF Forest Plan through a Decision Notice and Finding of No Significant Impact for the Canyon/Nest Project... DN/FONSI at 3... Through an October 31, 2003 decision, Mystic District Ranger Robert Thompson amended the BHNF Forest Plan through an ROD for the Prairie Project... ROD at 23... In a September 2005 Draft Environmental Impact Statement, the USFS announced it is proposing to amend the Forest Plan in relation to big game habitat standards through the Deerfield Project on the Mystic District of the BHNF. There are also other project decisions where the USFS similarly amended and/or is proposing to amend the BHNF Forest Plan, including the Coulsen timber sale and the Dean timber sale on the Hell Canyon and Bear Lodge Ranger Districts, respectively.</p>	<p>The Black Hills National Forest has amended the 1997 Forest Plan Revision five times. The first was the Phase I Amendment in 2001. Four project level amendments (Canyon/Nest 03/10/2003, Prairie 10/31/03, Coulsen 07/07/04 and Deerfield 10/20/05) regarding big game habitat effectiveness, thermal cover and MA 3.7. The Project level amendments were all non-significant amendments and allowed each Project a one-time deviation from management direction for big game habitat effectiveness values and/or thermal cover to better achieve the objectives for each Project. Refer to the Wildlife Cumulative Effects Section in the FEIS for more information on Forest Plan amendments and their consideration in the cumulative effects analysis.</p> <p>Other proposed Forest Plan amendments are the Phase II Amendment (significant Forest Plan Amendment addressing research natural areas, management indicator species, northern goshawk, and forest health posed by mountain pine beetle and increased fuel hazard) This decision has been made, although implementation has not yet occurred pending publication of the Notice of Availability in the Federal Register.</p> <p>The Bugtown gulch project is the only project to propose an amendment to big game habitat in management area 5.4. These amendments were considered in the analysis for this project.</p> <p>Such an analysis is more appropriately done at the Forest Plan level. The Forest Plan Monitoring Reports (USDA 1998-2005) for white-tail deer and elk populations are increasing Forest-wide, while mule deer is decreasing. The effects of the proposed amendments on wildlife are disclosed in Chapter 3 of the FEIS (more detailed information can be found in the Wildlife Report, BA/BE located in the Project File).</p> <p>Refer to comment 7-w from South Dakota Game, Fish and Parks.</p>
11-ttt	<p>Unfortunately, the impacts of the amendments proposed through the Bugtown Gulch timber sale, which obviously affect big game winter habitat on the entire BHNF, were not considered along with the impacts of the past amendments implemented through the Canyon/Nest project and the Prairie Project, which also affect big game winter habitat on the entire BHNF, and the amendments now proposed through the Deerfield Project, which also</p>	<p>Refer to response to comment 11-sss</p>

	<p>affect big game winter habitat, and any other amendments that similarly affect wildlife habitat. Thus, the cumulative impacts of the proposed forest plan amendments were not adequately analyzed and assessed. Since the BHNH was the geographic unit within which the USFS chose to set forth binding big game habitat standards and guidelines in the Forest Plan, the USFS has a duty to analyze the cumulative impacts of past and reasonably foreseeable forest plan amendments through the DEIS.</p>	
11-uuu	<p>The DEIS seems to lack an analysis of air quality impacts, raising concerns that the agency has not taken a hard look at potentially significant impacts.</p> <p>Of particular concern is that there is no analysis or assessment of attendant fugitive particulate matter increases associated with traffic on dirt roads and/or construction activities is presented in the DEIS. At the least, such an analysis would be necessary to ensure the direct and indirect impacts of the Bugtown Gulch timber sale do not lead to violations of PM₁₀, PM, and TSP ambient air quality standards. Especially since such impacts are likely to be sustained over long periods of time (e.g., several months), an analysis of fugitive dust emissions must be conducted in order to properly assess air quality impacts and to make a reasoned and informed decision in relation to the Bugtown Gulch timber sale.</p>	<p>Air quality impacts from this project are briefly discussed in the Effects section under Fire and Fuels in Chapter 3. The effects are mainly related to smoke from pile burning or wildfire. No prescribed burning is proposed and no road building will occur. Dust abatement is included as a design criteria, see Appendix B.</p> <p>Air quality impacts from prescribed fire, traffic related to timber harvesting, yarding, road building and rebuilding, and maintenance are covered in the Forest Plan EIS and therefore outside the scope of the Bugtown Gulch Project Area's FEIS. The Forest Plan FEIS considered such impacts as temporary and localized. Meeting smoke dispersal objectives is part of the decision prior to burning piles. Note that the annual monitoring and evaluation report for the Black Hills Forest Plan includes Air Quality as a Monitoring Item. No violations or complaints attributed to National Forest project activities have been noted. See letter 11, comment vvv regarding milling and processing of wood products.</p>
11-vvv	<p>We also request the USFS analyze and assess the cumulative air quality impacts associated with timber milling and processing. The South Dakota DENR maintains emissions data for Neiman Timber Company's Hill City lumber mill and Pope and Talbot Co.'s lumber mill, as well as emissions data for any other processing facility that may utilize timber sold through the Bugtown Gulch timber sale. The USFS cannot simply overlook such impacts, especially since milling and processing are connected actions related to the agency's decision to authorize commercial logging. Indeed, milling and processing would not and could not occur if the USFS did not authorize the Bugtown timber sale. Thus, the USFS has an obligation to consider the air quality impacts of these facilities in the Bugtown timber sale DEIS.</p>	<p>Refer to the Forest Plan FEIS for further elaboration on air quality impacts, timber production, social and economic consequences, employment and income, and social environment narratives. Analyzing and assessing the cumulative air quality impacts as you describe are covered by the Forest Plan EIS and therefore outside the scope of the Bugtown Gulch Project Area DEIS. Since any material sold with a timber sale is accomplished with competitive bidding, there is no way of knowing where the material will end up for processing. It may go to Hill City, Spearfish, into Wyoming, or potentially in some other state. Potentially, there may be several sales of material from this project, so each sale's material could conceivably be delivered to a different location. It is possible that all of the sale material would go out of state. Milling and processing at the Neiman's and Pope and Talbot's mills can occur without logs purchased from the Forest Service; both companies routinely purchase material from other sources. Regulation of emissions from such production sites fall under the responsibility of the State of South Dakota's Department of Environmental Resources (SD DENR). The SD DENR is responsible for administration of the air quality program to maintain air quality levels in South Dakota that protect human health, safety and welfare and the National Ambient</p>

		<p>Air Quality Standards established through the Federal Clean Air Act. The department achieves this goal by monitoring the ambient air quality throughout the state, permitting businesses and facilities that emit air pollution, and ensuring compliance with the state laws and rules. Also see response to letter 11, comment uuu regarding air quality as a Forest Plan monitoring item.</p>
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