

APPENDIX I: 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	Russell Eagle Bear-THPO	Rosebud Sioux Tribe
3	Robert Stewart	US Dept of Interior
4	John Emmerich	WY Game and Fish
5	Suzanne Lewis	Biodiversity Conservation Alliance
6	Kelly Dennis	Crook County Land Use Planning and Zoning Commission
7	Aaron Everett	Black Hills Forest Resource Association
8 Received Late	Jay Hein	Wyoming State Forestry

Letter and Comment Number	Public Comment	Agency Response
1-a	this is a national forest. national taxpayers are taxed to pay for it. national taxpayers should get the foremost attention when making comments about what they want in this site since they are paying for it. local lumber barons do not need to be kowtowed to because this is a national site.	Opportunities for public input on this project have included scoping on the proposed action, as well as the comment period on the Draft EIS. Various, groups, agencies, tribes, and individuals have been contacted in regard to this project and all input is considered equally.
1-b	pg 7 - cut out all logging, which causes erosion, causes wildlife and birds to become homeless and die. logging is not sustainable at all for the complete ecological scheme at this site. logging millions upon millions of board feet is decimating and destructive.	Page 7 of the Draft EIS lists Goal 3 from the Forest Plan – “Provide for sustained commodity uses in an environmentally acceptable manner”, including the ASQ. Making changes to the Forest Plan is outside the scope of this project. Alternative 1, No Action, would defer all timber harvesting in this project area. The effects to soils and to wildlife, including birds, are discussed in Chapter 3 of the FEIS.
1-c	ban all snowmobiling.snowmobiles are horribly polluting. in one hour, an unregulated two	Banning snowmobiles in the project area is outside the scope of this project. This is an allowable use on the Black Hills National

	<p>stroke snowmobile can emit as much hydrocarbon, carbon monoxide and nitrous oxide as 100 automobiles (EPA 2002). a snowmobile may expel 25 percent to 30 percent of it sunburned fuel (gas and oil mix) out its tailpipe. Air pollution at trailheads and along snowmobile trail corridors in areas of heavy use causes increases in acidity and the development of lethal concentrations of nitrogen, sulfate and hydrocarbon compounds in snow.</p> <p>Pollutants from snowmobile emissions, including benzene, 1,3 butadiene, polycyclic aromatic hydrocarbons (PAH) and methyl tertiary butyl ethel (MTBE) become locked within the snowpack. EPA classifies all of these as known or probable human carcinogens. The toxic effects of those accumulated pollutants are magnified during the spring snowmelt. Surrounding waterways have higher acidity levels and correspondingly higher mortality rates of aquatic insects and amphibians. The hydrocarbons and lead emitted from snowmobiles hae also been determined to adversely affect brook trout (adams 1975).</p> <p>Nearly all gas sold contains MTBE. The amount of MTBE released from a single two stroke snowmobile may be as much as 800 grams a day, with a significant amount incorporated into the snowpack (einarson 2002). During the snowmelt, the dissolved MTBE enters nearby surface water and groundwater.MTBE does not adhere to soil particles and resists biodegradation. Low levels of MTBE can make drinking water supplies undrinkable due to its offensive taste and odor.</p> <p>Snowmobiles have drastic effects on small animals, notaby those overwintering in sub snow environments (Bury 1978). Jarvinin and Schmid (1971) found marked increases in winter mortality of small mammals underneath snowmobile compacted snowfields. the snowmobiles compact the snow, destroying air spaces between the snow and soil, reduce snow depth, increase density of the snow, and decrease snow insulation of the small subnivean air space. The air in the subnivean layer may also become toxic with unutuually high amounts of carbon monoxide emitted from snowmobile exhaust (Neumann and Merriam 1972).</p> <p>Noise produced by snowmobiles may alarm some wintering wildlife and cause them to avoid searching for food near snowmobile trails.</p> <p>Conflicts may arise between snowmobiles and other users when te two uses converge. Cross country skiers feel the noise disturbs their quiet solitude. They complain about the smell of the machines fuel emissions. Conflicts then arise because the motivations for participation of the pedestrian users are compromised and anticipated experiences are unfulfilled (jackson and wong 1982). \</p>	<p>Forest.</p> <p>Snowmobiles are not permitted to operate within the Beaver Creek Cross-country ski area, which is located within the Norwood project area. The Norwood project would not change this exclusion of snowmobiles within Beaver Creek Ski area.</p>
1-d	pg 8 - managing for low fire means too much logging. these are my comments for the record	Comment noted.

	against this plan.	
2	<p>We are responding to your letter dated March 22, 2007 in reference to the Draft Environmental Impact Statement for the Norwood Project on the Hell Canyon District for the proposed activities to enhance vegetative diversity, reduce the risk of mountain pine beetle infestation and wildfire.</p> <p>As the Tribal Historic Preservation Officer for the Rosebud Sioux Tribe I appreciate your notification of the undertaking and the awareness you are demonstrating for the archaeological sites and cultural heritage of Indigenous peoples.</p> <p>At this time we have no concerns for this project to proceed as planned. If sites are to be affected by this undertaking, please notify my office as soon as possible for consultation.</p>	Thank you for your response. Your office will be contacted for consultation if any sites would be affected or if new sites are discovered during project implementation.
3a	<p>(Page 37, last para, of DEIS) Peak Flows “can” occur in any month, therefore a more accurate way to describe the record would be to state that during the period of historical record, annual peak flows have most commonly occurred during April through June (presumably as a result of snow melt) and infrequently during March and July through October (presumably as a result of intense thunderstorms). In addition, the period of record for these streamflow gaging stations is longer than indicated.</p> <p>http://nwis.waterdata.usgs.gov/nwis/nwisman/?site_no=06392900&agency_cd=USGS http://nwis.waterdata.usgs.gov/nwis/nwisman/?site_no=06429500&agency_cd=USGS</p>	<p>A further review of the records does show that annual peak flows on Cold Springs creek have historically occurred from March through August and that April has had more annual peak flows than any other month.</p> <p>It is true that the gaging stations have been in use longer than 21 years, however peak flows have not been recorded in each of those years. Therefore, the EIS has been edited as follows to more accurately reflect this, “In the 21 years peak flows were recorded...”.</p>
3b	<p>(Page 38, first para, of DEIS) Peak flow is simply the highest flow at a location during a period of interest, such as a year, a period of record, or an individual storm, so the phrase “Peak flows from the Norwood project area are rare” does not contribute to the meaning of the sentence. It could be stated that direct runoff is very uncommon or that runoff only occurs in response to intense local rainstorms or spring snowmelt.</p>	Thank you for your comment, the paragraph has been reworded.
3c	<p>(Page 38, 3rd para, of DEIS) The DEIS indicates that Cold Springs Creek is entirely on private land. However, Table 3.8 indicates that 13.5 miles of the over 40 miles of the ephemeral portion of the stream is on private land; 0.39 miles of 0.87 miles of the intermittent portion is on private land; and 2.95 miles of 2.97 miles of the perennial portion is on private land.</p>	The paragraph has been reworded to reflect that the majority of the perennial section of Cold Springs Creek is on private land.
3d	<p>(Page 39, first para, of DEIS) It is stated that “Roads tend to concentrate water and put it where it is not designed to go.” The intent of this statement is unclear.</p>	Thank you for your comment, the sentence has been removed.
3e	<p>(Page 41, 4th para of DEIS) The discussion of “flow regime” focuses exclusively on the availability of surface water in simplistic terms. A more complete analysis of the potential hydrologic consequences of harvesting or prescribed burning of forested areas would address potential changes in the timing and nature of peak flows, potential increases in ground-water recharge, and potential changes in baseflow conditions. Streams within such areas often have “flashier” peak flows, as compared to pre-existing conditions, with increased volumes of runoff during shorter periods of time. Such runoff events can result in increased erosion and loss of streambank stability. The assessment also could address the potential for increased infiltration to ground water, which can result in changes in baseflow conditions in adjacent</p>	<p>The proposed activities would not influence the timing and nature of peak flows in the project area because of our precipitation regime and geology. The Black Hills are unlike the Rocky Mountains that have a snow/snow melt regime. Harvesting or burning activities in the Rocky Mountains can change the timing and nature of peak flow. The Black Hills get the bulk, 75%, of precipitation in the spring and summer. As stated in the existing condition report, the average annual precipitation for the project area is only 21 inches, which is not a</p>

	streams and increased recharge to deep aquifers. Neary et al. (2005) provide a comprehensive discussion of the hydrologic effects of fires.	lot of water that could runoff but generally does not because of the geology.
3f	(Page 42, 2 nd para, of DEIS) The previous comment, including the complex and negative effects of fire, also would apply to this paragraph.	See comment under 3e.
3g	(Page 43, 3 rd para, of DEIS) The previous comment also applies to this section, which only addresses increases in the flow regime due to decreased potential for evapotranspiration. Issues related to timing due to loss of attenuation from plants and changes in infiltration from disturbed or compacted ground, temporary access roads, and similar impacts are of potential concern. These factors also will affect the discussion of temperature and oxygen for alternative 2 on page 45.	See comment under 3e. Changes in infiltration from disturbed or compacted ground and temporary road access is not an issue in the Black Hills, especially on the Limestone Plateau. Observation on field visits and BMP monitoring has shown that overland flow is rare and only occurs during extreme rain events with extreme rainfall intensities which are not common. The landscape generally is able to absorb the precipitation because of the geology and runoff is not very common for the planning area.
4a	The most current Silviculture Best Management Practices-Wyoming Nonpoint Source Management Plan (Wyoming Department of Environmental Quality) outlining Forestry Best Management Practices developed for Wyoming should be applied to this project to minimize impacts to aquatic resources. Consultation with our local Department biologists is encouraged if avoidance of specific aquatic issues are in question and/or the Wyoming BMPs do not provide clear direction.	A notation has been added to Appendix B, page 1, which states that the most current State BMPs and WCPs will be utilized.
5 introduction	<p>Biodiversity Conservation Alliance, Native Ecosystems Council, Center for Native Ecosystems, The Ark Initiative, Prairie Hills Audubon Society, and Suzanne H. Lewis submit these comments in response to the U.S. Forest Service's (USFS) March 2007 Draft Environmental Impact Statement (DEIS) for the Norwood Project on the Black Hills National Forest (BHNF). Because the project involves a significant level of commercial logging and other tree cutting activities, it will be referred to as the Norwood timber sale.</p> <p>The Norwood timber sale DEIS fails to take a serious and objective look at the environmental impacts of logging and road construction in the Black Hills and fails to adequately protect the natural values of the BHNF. The DEIS exaggerates "forest health" concerns in an attempt to justify more commercial logging in an already stressed forest ecosystem. If the USFS chooses to continue to move forward with the Norwood 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.</p> <p>The Norwood timber sale is also an early project implementing the recently adopted Phase II Amendment to the 1997 BHNF Revised Land and Resource Management Plan ("LRMP"). Unfortunately, the Phase II Amendment is flawed in many ways and ultimately fails to adequately protect native wildlife, fish, and plants and their habitats to ensure their viability across the BHNF. This in turn casts serious doubt over whether the Norwood timber sale will adequately protect wildlife, fish, and plants and their habitats.</p>	<p>The Norwood project is consistent with the Black Hills National Forest, Land and Resource Management Plan.</p> <p>Implementing only non-commercial treatments in the wildland urban interface would not meet the Purpose and Need for the Norwood project.</p> <p>The sufficiency of the Phase II Amendment is outside the scope of this project.</p> <p>Refer to responses to comments 5a -5q</p>

5a	THIS COMMENT PURPOSEFULLY LEFT BLANK	
5b	<p>The Phase II Amendment is flawed and illegal and therefore the USFS cannot move forward with the Norwood timber sale. Our concerns over the Phase II Amendment as they relate to the Norwood timber sale are as follows.</p> <p>As will be discussed in more detail in these comments, the proposed Phase II Amendment (and all action alternatives for that matter) does not live up to the USFS's promises as set forth in the Settlement Agreement in Civil Action No. 99-N-2173. In particular, the Phase II Amendment and all its proposed alternatives violate the Settlement Agreement by failing to address and fix the following flaws in the 1997 Revised BHNF LRMP as identified in the Chief's 1999 Appeal Decision:</p> <ol style="list-style-type: none"> 1. Failing to ensure sufficient large diameter snags for snag-dependent species such as the northern flicker, black-backed woodpecker, three-toed woodpecker, Lewis' woodpecker, common flicker, and pygmy nuthatch are provided across the BHNF. 2. Failing to ensure sufficient snag densities for snag-dependent species such as the black-backed woodpecker and common flicker are provided across the BHNF. 3. Is not based on sufficient population trend data for snag dependent species to provide a context for the impacts of forest management to snag densities taking into consideration the "current age and structure of the forest" and any other natural or human-caused impacts to snag densities. 4. Fails to establish a sufficient snag density standard that meets the documented needs of snag-dependent species of wildlife on the BHNF in order to ensure snag dependent species viability on the BHNF. 5. Fails to allow natural fires to occur at some level on the BHNF in order to benefit the Lewis' woodpecker and in fact prescribes measures to supposedly reduce their occurrence. 6. Does not provide standards and guidelines, supported with the necessary analysis and information, that maintain the viability of the Lewis' woodpecker. 7. Fails to provide the necessary information and analysis that supports any measure designed to protect the northern goshawk and its habitat. 8. Fails to provide specific measures to protect the goshawk and its habitat on the southern third of the forest while providing overall measures that protect the goshawk 	<p><i>The Phase 2 Amendment addresses all aspects of the 2000 settlement agreement. See Phase 2 FEIS Chapter 1, Section 1-1.3. The Phase 2 decision addresses all of the Chief's concerns documented in the Consolidated Appeal decision of October 12, 1999. See Phase 2 FEIS Chapter 1, Section 1-1.2.</i></p> <p><i>The Phase 2 decision addresses all points stipulated in the settlement agreement of September 2000 (Civil Action No. 99-N-2173, Biodiversity Associates v. Laverty). In this document the Forest Service agreed to consider research areas, management indicator species and goshawks in the Phase 2 analysis. Please refer to Chapter 1 of the Phase 2 FEIS for more information; Chapter III, pages III-7 through III-13 describes effects on snags. The northern flicker/common flicker is not discussed in the Phase 2 EIS because it was not selected as an emphasis species. Snag densities in relation to black-backed woodpeckers are discussed in Phase 2 FEIS Section 3-3.3.7.1 and in Appendix C. Effects on black-backed woodpecker are described in the Phase 2 FEIS on pp. III-238 through III-247, and Appendix C pp. 196-205; effects on three-toed woodpecker are described in Appendix C pp. 190-195; effects on Lewis' woodpecker are described in Appendix C pp. 220-225; effects on pygmy nuthatch are described on p. III-190 through III-194 of the FEIS.</i></p> <p><i>Available population data for snag dependent species is presented in Phase 2 FEIS Chapter 3, Section 3-3.3 and in Appendix C. The current age and structure distribution of the forest, including snag densities, are discussed in Phase 2 FEIS Chapter 3, Section 3-2.1.</i></p> <p><i>The effects of the snag density objectives, standards and guidelines for each alternative are discussed for snag dependent species in Section 3-3.3 in the Phase 2 FEIS and in Appendix C.</i></p> <p><i>The analysis for Lewis' woodpecker is included in Phase 2 FEIS Appendix C. The analysis includes a discussion on the expected effects of meeting structural stage objectives (Objectives 4.1-203, 5.1-204, 5.4-206, 5.43-204, and 5.6-204), snag objectives (211), post fire salvage objectives (11-03), and snag standards and guidelines (2301).</i></p>

	<p>and its habitat on the entire BHNF.</p> <ol style="list-style-type: none"> 9. Fails to provide standards and guidelines that maintain goshawk viability in accordance with the NFMA, its implementing regulations, and FSM direction. 10. Fails to analysis and information that supports the effectiveness of best management practices (“BMP’s”) in protecting native fish species. 11. Fails to provide analysis and information that supports determinations that the impacts of management to native fisheries are not significant, fails to adequately analyze the impacts of non-native fish species to native fish species, and fails provide scientifically supported measures that protect native fisheries and ensure native fish species viability. 12. Fails to ensure viable populations of existing fish species are maintained on the BHNF. 13. Fails to provide monitoring objectives specific to the northern leopard frog. 14. Outright ignores, and at worst attempts to discount, the findings of the 1993 and 2002 Frest and Johannes reports and fails to ensure the viability of snail species of concern. 15. Fails to develop and implement a species-specific monitoring plan with quantified goals and objectives for management indicator species (“MIS”) and sensitive species and their habitat. 16. Fails to develop adequate quantitative MIS population goals and ensure project-level activities do not jeopardize these goals. 17. Fails to select and monitor MIS in accordance with NFMA regulations and FSM direction. 18. Fails to develop a sensitive plant monitoring plan that provides quantitative, consistent, unbiased, and defensible data in order to determine what effects management activities are having on populations of sensitive plants. 19. Fails to ensure livestock grazing does not conflict with the values for which Botanical Areas are designated, fails to provide monitoring requirements that quantify the impacts to sensitive plant species in order to ensure livestock grazing does not conflict with the values for which Botanical Areas may be designated. 	<p><i>Analysis of effects of each alternative on northern goshawks is discussed in Phase 2 FEIS Appendix C, Section 4-6.10.</i></p> <p><i>The biological evaluation for the Phase 2 Amendment projected that goshawks are likely to persist under implementation of Alternative 6 due to nest area management direction, late successional areas, sufficient snags and downed logs, and structural stage objectives (FEIS Appendix C, p. 243). Specific management direction relating to the northern goshawk includes Standards 3108 and 3111, as well as direction concerning snags, downed logs and structural stages (Phase 2 FEIS, Appendix D). NFMA directs that the Plan will be developed for the planning area, which is the National Forest. The amendment does not provide objectives, standards and guidelines for goshawks specifically for management areas in the southern third of the Forest. These areas are covered by the Forest-wide goshawk standards and guidelines.</i></p> <p><i>NFMA and FSM direction do not prescribe standards and guidelines for goshawks. Standards and guidelines were developed for each alternative consistent with requirements of NFMA and FSM direction. Goshawk-specific standards and guidelines are shown in Phase 2 FEIS Appendix D (Standards/guidelines 3108 - 3114).</i></p> <p><i>Best management practices were addressed throughout Chapter 3 of the Phase 2 Amendment EIS. Page 3-59 specifically discusses BMP effectiveness related to water resources. Page 18 of the 2002 Forest Plan monitoring report discusses compliance with and the effectiveness of best management practices.</i></p> <p><i>The significance of impacts to native fish are disclosed in the Aquatic Ecosystem section and individual fish species discussions in the Phase 2 EIS and Appendix C (BA/BE). The Phase 2 EIS analyzes the effects of implementing Forest Plan standards and guidelines, watershed conservation practices and Best Management Practices that are based upon research and current practices that conserve or enhance aquatic habitat to ensure native fish species viability. The effects of non-native fish on native fish are disclosed in Appendix C, pages 172, 176, and</i></p>
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<p>20. Fails to provide sufficient and specific standards and guidelines that assure the protection and viability of sensitive plant species.</p> <p>21. Fails to provide specific direction relating to maintaining viable populations of species.</p> <p>22. Is not based on viability determinations supported by species-specific discussions of critical habitat features, actual populations, and habitat distributions in order to meet the requirements of the NFMA and its implementing regulations.</p> <p>23. Fails to provide habitat capable of supporting well-distributed populations of native vertebrate species across the planning area.</p> <p>24. Fails to present a fragmentation analysis for those species where fragmentation effects are suspected or known to affect the species.</p> <p>25. Fails to ensure compliance with the NFMA and its implementing regulations with regards to the diversity of plant and animal communities and species viability.</p> <p>In addition, the Phase II Amendment fails to comply with key paragraphs of the Settlement Agreement. In particular, the Amendment:</p> <ol style="list-style-type: none"> 1. Fails to ensure the viability of the northern goshawk, as required by § (2)(a) of the Settlement Agreement. 2. Fails to provide for monitoring of MIS in accordance with the NFMA implementing regulations. 3. Fails to appropriately evaluate and ensure the viability of MIS. 4. Fails to appropriately analyze candidate Research Natural Areas (“RNAs”). <p>And finally, the Phase II Amendment violates the Settlement Agreement because it fails to comply with the requirements of the NFMA, NFMA implementing regulations, and USFS policy regarding the maintenance of viable populations of wildlife, fish, and plants on the BHNF. Among other things, the Phase II Amendment does not provide sufficient habitat to maintain viable populations of certain species, fails to appropriately assess species viability based on the NFMA regulations, fails to ensure viable populations exist in the first place, inappropriately rejects potential MIS, fails to provide for the monitoring of populations of</p>	<p><i>181 of the FEIS).</i></p> <p><i>Leopard frogs, as a sensitive species, will be monitored according to Chapter 4 of the Forest Plan as amended. See Phase 2 FEIS Appendix D for a list of monitoring items.</i></p> <p><i>The 1993 and 2000 Frest and Johannes reports were used and referenced in the analysis. The report serves as a valid survey of snail occurrence and distribution. The Phase 2 EIS discloses uncertainty associated with the suggested taxonomic changes to Cooper's mountainsnail because the suggested taxonomic changes have not been peer reviewed and accepted through the scientific community. Based on other comments received on the Phase 2 DEIS, direction for management of snail colonies has been revised in Alternative 6 and the persistence of snails on the Forest was analyzed in Chapter 3, Section 3-3, and in Appendix C.</i></p> <p><i>Chapter 4 of the amended Forest Plan addresses monitoring. Species-specific protocols are included in the Forest Plan Monitoring Implementation Guide.</i></p> <p><i>MIS objectives were developed based on the agency's most current interpretation of law, regulation and policy regarding MIS requirements. The Forest Plan provides direction regarding MIS trend in the form of Objectives, Standards and Guidelines for the Planning Area (National Forest). Projects are analyzed for their consistency with the Forest Plan to evaluate if MIS direction is being met.</i></p> <p><i>The selection of MIS followed the Regionally approved process identified in Hayward et al. 2001. Monitoring of MIS will be based on protocols designed to collect the data needed to evaluate the attainment of MIS-specific objectives.</i></p> <p><i>Grazing conflicts are site-specific and are addressed at the allotment planning level, following Forest Plan objectives, standards, and guidelines addressing botanical areas and livestock grazing. An example is Standard 3.1-2503, which restricts livestock access to designated botanical areas in order to protect occurrences of sensitive species or species of local concern. Concerning monitoring, see Forest Plan Chapter 4, especially the Vegetative Diversity monitoring items.</i></p>
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	<p>MIS, and fails to provide for a diversity of plant and animals.</p>	<p><i>Maintaining viable populations of native and desired non-native plants and animals is required through the National Forest Management Act (Section 6(g)(3) and USDA Departmental Regulation 9500-4. It is not necessary to repeat this requirement as a standard in the Forest Plan. .</i></p> <p><i>The Phase 2 Amendment includes goals, objectives, standards and guidelines to conserve plant and wildlife species and their habitat in a multiple-use context. This direction is consistent with direction in the planning regulations on maintaining viable populations of species.</i></p> <p><i>Habitat requirements of each species are discussed in the Phase 2 FEIS "Affected Environment" section under each species. Effects to these habitat features are evaluated relative to each alternative immediately following the habitat descriptions.</i></p> <p><i>The Phase 2 Amendment includes goals, objectives, standards and guidelines to conserve plant and wildlife species and their habitat in a multiple-use context.</i></p> <p><i>Fragmentation relevance and effects vary by species and their habitat needs and mobility. Abundance and distribution of habitat for individual wildlife species for which fragmentation is a concern is discussed in Phase 2 FEIS Chapter 3, Section 3-3.</i></p> <p><i>The determination of effects of the Phase 2 Amendment for all threatened, endangered, and sensitive specie, and also species of local concern, are disclosed in the Phase 2 FEIS Chapter 3 Section 3-3, and in Appendix C.</i></p> <p><i>Please refer to response to Comment 5b, item #8. The Phase 2 Amendment analysis concluded that goshawk viability will be maintained (Phase 2 Record of Decision p. 7).</i></p> <p><i>Monitoring of MIS is disclosed in the Monitoring Approach section of individual MIS discussions on pages 3-224 to 3-299 of the Phase 2 EIS. Monitoring strategy is shown in Chapter 4 of the amended Forest Plan. Specific protocols are located in the Forest Plan Monitoring Implementation Guide.</i></p> <p><i>The viability of MIS that are also sensitive species is disclosed in</i></p>
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		<p><i>the Phase 2 Biological Evaluation (FEIS Appendix C). The viability of MIS that are not sensitive species is disclosed in the Phase 2 FEIS.</i></p> <p><i>During the Phase 2 Amendment process, a total of 121 areas were evaluated for their potential as candidate RNAs. Of these 121, nine candidate areas were identified. Please refer to the Phase 2 FEIS, Sec. 3-6.2. The detailed analysis process can be reviewed in the “Final Screening and Rationale for Areas Considered for Evaluation as Research Natural Areas”, available on the Black Hills NF Web site (www.fs.fed.us/r2/blackhills/)</i></p> <p><i>Violates Settlement Agreement – see initial response to comment 5b. All alternatives considered in the Phase 2 FEIS include goals, objectives, standards and guidelines to conserve native and desirable non-native plant and wildlife species and their habitat in a multiple-use context. This direction is consistent with the law.</i></p>
5c	<p>The ability of the Phase II Amendment to ensure viable, well distributed populations of native wildlife, fish, and plants is mostly predicated upon the USFS meeting goals, objectives, or guidelines. For instance, to ensure the long-term persistence of old-growth dependent species, the USFS relies upon meeting structural stage “objectives” in each of the various management areas. Yet the reliance upon goals, objectives, and guidelines to ensure adequate species and habitat protection is entirely inappropriate as they provide no measurable protection.</p> <p>A guideline is discretionary and unenforceable. As the USFS states in the 1997 Revised BHNF LRMP:</p> <p>A forest guideline is defined as a preferred or advisable course of action. Deviation from a guideline is permissible if the responsible official documents the reasons for a deviation. (p. II-1)</p> <p>In the Chief’s appeal decision, the BHNF was specifically criticized for relying on guidelines to ensure the viability of the northern goshawk. Goals too are discretionary and carry even less weight as required management actions. As the 1997 Revised BHNF LRMP states:</p> <p>Goals describe a desired end result and are normally expressed in broad general terms. Forest plan goals link broad agency goals as set forth in law, executive order, regulation, agency directives, and the Resource Planning Assessment program.</p>	<p><i>Each feature in the Phase 2 Amendment contributes to species habitat management. The Forest relies on achieving goals and objectives while following standards and guidelines to provide species habitat. It is inappropriate to use standards alone because there would be no reference for desired conditions. Objectives provide the framework for the ecosystem approach to managing the Forest and providing species habitat. Some species have specific requirements for conservation. For these species, standards are appropriate to ensure species-specific habitat features are maintained. Examples of species-specific standards include 3108 (goshawks), 3103 (snails), and 3120 (burrowing owls).</i></p>

	<p>These goals also closely reflect the Regional goals described in the Rocky Mountain Regional Guide, 1992.</p> <p>The Forest Plan does not specify a time period for achievement of goals. Additionally, Forest Plan goals are generally not expressed in quantitative terms; rather, assessment of whether goals are being achieved occurs through monitoring of associated measurable objectives. (p. I-1)</p> <p>Objectives too are discretionary. The 1997 Revised BHNF LRMP states:</p> <p>Objectives describe measurable desired results intended to promote achievement of Forest Plan goals. Objectives describe (1) desired resource conditions in the area covered by the Plan, either in the next decade or longer and (2) desired levels of goods and services that the Plan area is capable of producing in the next decade. Objectives describing desired levels of good and services are only described on a Forestwide basis, while those describing desired resource conditions are either Forestwide or applicable to a portion of the Forest or a specific management area.</p> <p>The Forest Supervisor shall strive to plan and implement projects which contribute to achieving Forest Plan objectives in a manner consistent with Forest Plan standards and applicable legal requirements. Many variables affect achievement of objectives which cannot be fully assessed when a plan is revised or amended. However, a forest plan need not be amended if forest plan objectives are not achieved.</p> <p>In other words, the USFS should “strive” to “contribute” to objectives, but is not required to actually meet them.</p> <p>Furthermore, as the USFS has explained, compliance with an LRMP is based <u>only</u> on whether Standards are met. The 1997 Revised BHNF LRMP states:</p> <p>The determination of whether or not an individual project is consistent with the Forest Plan shall be based on whether or not the project adheres to Forestwide and Management Area <u>Standards</u>.</p> <p>Plan objectives, Forestwide and management area guidelines, project-specific outputs, and activity schedules should not be used in the [Forest Plan] consistency determination.</p> <p>Resource plans and permits, contracts, and other instruments issued for the use and occupancy of National Forest System lands must be consistent with the Forest Plan</p>	
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	<p>unless specifically exempted from applicability in an amendment or revision decision document. Determinations of consistency of permits, contracts, and other instruments for occupancy and use of National Forest System lands are based on whether or not they adhere to Forestwide and Management Area <u>Standards</u>. (Preface-5, emphasis added)</p> <p>Thus, for LRMP direction to mean anything on the ground, to mean anything in terms of actual, measurable results that actually maintain species diversity and viability, the USFS must rely primarily, if not entirely, upon the effectiveness of Standards. Unfortunately, the Phase II Amendment does not do this.</p> <p>Instead, the USFS relies heavily, if not entirely, on meeting guidelines, goals, and objectives, none of which actually require any on the ground results. While the USFS may “promise” to meet them, ultimately this promise is universally empty. Goals, objectives, and guidelines carry with them infinite discretion. As the NFMA, NFMA implementing regulations, and USFS policy require <u>substantive results</u> in terms of meeting diversity and viability requirements, so too do these laws, regulations, and policies require more than an empty promise to ensure adequate protection of wildlife, fish, and plants. So long as the USFS attempts to rely on goal, objectives, and guidelines to ensure diversity and viability, the agency will be failing to meet its basic legal and biological obligations.</p>	
5d-1	<p>Snags and Snag Dependent Species</p> <p>The USFS clearly recognizes that many species of wildlife depend on snags for their survival and persistence and we greatly appreciate all the efforts that the USFS has undertaken to better understand the needs of snag-dependent wildlife in the BHNF. However, as will be discussed, proposed snag management direction does not seem to reflect the needs of wildlife as disclosed in information available to and even prepared by the USFS, a disturbing revelation. As the Chief stated in his appeal decision:</p> <p>After reviewing the record, I find that the Revised Plan does comply with the intent and requirements of the implementing regulations with respect to gathering information. However, I find that the Revised Plan did not make use of this information to establish a sufficient standard for snag density. (p. 45).</p> <p>The USFS seems to not be heeding the Chief’s ruling and making the same mistake again through the Phase II Amendment.</p>	<p><i>The effects of Phase 2 Amendment snag density objectives, standards, and guidelines are discussed for snag-dependent species in Phase 2 FEIS Section 3-3.3 and in Appendix C. Phase 2 Amendment FEIS alternatives 2 and 4 included snag direction from the 1999 Appeal Decision. Alternatives 3 and 6 were similar to the 1999 appeal decision because they used an average of 3 snags per acre. The Chief’s ruling of 2 snags per acre on south and west facing slopes and 4 snags per acre on north and east facing slopes would likely result in an average of about 3 snags per acre.</i></p>
5d-2	<p>The Inadequacy of Existing Snag Conservation Measures</p> <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</p>	<p><i>Natural snag spacing is not even. Snag densities in the Phase 2 Amendment FEIS alternatives were reasonable, given that some areas will have higher numbers of snags while some areas have none. Other objectives such as 11-03 were designed to provide</i></p>

	<p>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>Thus, for the USFS to ensure legally and biologically adequate snag management, the Phase II Amendment must provide for more large diameter snags across the landscape. Unfortunately, the USFS does not seem to have done so in any of the proposed action alternatives. While this situation in and of itself renders the proposed snag retention measures under all action alternatives wholly inadequate, there is further indication that the proposed snag management measures are not only entirely inadequate, but will ultimately fail to ensure sufficient habitat is provided to ensure the viability of snag-dependent wildlife.</p>	<p><i>some areas of high snag density. Other standards such as 2301 were designed to provide larger snags to the extent possible. The effects of snag direction for each alternative are discussed for snag-dependent species in Phase 2 Amendment FEIS Section 3-3.3 and in Appendix C.</i></p> <p><i>See Phase 2 FEIS, pg. III-13 – snag recruitment will be provided by structural stage diversity.</i></p> <p><i>See Phase 2 FEIS, pg. III-190-194, regarding the pygmy nuthatch – sufficient large trees will be well-distributed across the Forest.</i></p>
5d-3	<p>Snag Diameters</p> <p>Snag diameters on the BHNF are extremely low and are already insufficient to meet the needs of wildlife (Spiering and Knight 2004). The existing conditions indicate that snag-dependent wildlife are essentially living on deficit habitat, a situation that will only lead to declines and potentially extirpations of snag dependent wildlife. Spiering and Knight (2004) estimate that of the snags in the BHNF, snags greater than 20” dbh average only 0.2 per acre. This isn’t</p>	<p><i>See response to comment 5d-2 and Phase 2 FEIS p. III-8 regarding snags – Spiering and Knight study cited and summarized.</i></p>

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.

(Graph Omitted)

Several species of wildlife are reported to depend on larger diameter snags, most with diameters of around 20" or greater, but at least greater than 15" dbh. Indeed, Spiering and Knight (2004) report that wildlife use of snags increased as diameter increased. The USFS also discloses this forthrightly in the FEIS and associated biological evaluation. In addition, all species of wildlife that require large diameter snags invariably require more than one per acre. The welfare of the pygmy nuthatch is of particular concern given its extremely low numbers in the BHNF (Panjabi 2001, 2003, 2004). Elsewhere, the species is common in ponderosa pine forest (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).

(Table Omitted)

Even under the USFS's liberal and unsupported estimate that snags greater than 15" dbh average 1.63 per acre (see, FEIS Table 3-5), habitat conditions on the BHNF are insufficient to ensure the viability of snag-dependent wildlife. To begin with, the pygmy nuthatch, Lewis's woodpecker, silver-haired bat, fringed myotis, American kestrel and other species have been found to depend on snags 17" or greater (see table above). Thus, including snags 15" or even 16" in diameter in estimates of suitable habitat for these species is inappropriate as such snags are not suitable habitat. Furthermore, and as will explained further in these comments, the silver-haired bat, Lewis's woodpecker, and other species require higher snag densities than 1.63 per acre.

Although the USFS may claim that large diameter snags (i.e., >15") exist in sufficient numbers in parts of the BHNF, this conclusion is difficult to stomach. On the one hand, if averages are so low, then obviously there more areas where there are no or very few large diameter snags than there are areas with sufficient numbers. The averages clearly show that, on balance, there cannot possibly be more areas that have sufficient numbers of large diameter snags than areas with few to no such snags. In addition, this conclusion ignores a key component of managing for diversity and viability, ensuring well-distributed habitat. If some areas of the BHNF have sufficient large diameter snags, while may areas do not, it is difficult to believe that this represents well-distributed habitat sufficient to ensure the viability of snag-dependent species of wildlife. In any event, the USFS has not pointed to any information or analysis showing where these areas of sufficient large diameter snags are located, how large

See Phase II FEIS, pgs. III-190-194 – Effects to pygmy nuthatch are analyzed and described

. See response to comment 5d-2 and Phase 2 FEIS pp. III-7 through 13 – snags estimated by diameter range.

See Phase 2 FEIS, pp. III-190 through 194 – pygmy nuthatch habitat will be well-distributed across the Forest under Alternative 6.

	<p>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>Adding to the concern over the inadequacies of existing snag diameters is the fact that snag recruitment will invariably produce fewer and fewer large diameter snags as the BHNF continues to experience extensive logging and thinning. To address the shortages of large diameter trees, there needs to be sufficient numbers of large diameter trees. Yet, the FEIS discloses that, in total, live trees greater than 15” dbh average only 9.4 per acre across the entire BHNF. <u>Trees greater than 20” average only 1.3 per acre.</u> Although if every tree greater than 15” were to die tomorrow and become snags, some of the problems may be solved, this is not what happens in reality. In reality, mortality is a slow process. While the FEIS presents no estimate of mortality rates, we have seen estimates in project-level EAs of less than one tree per acre per year. Thus, even by existing mortality rates, it is likely that sufficient numbers of large diameter snags will not come into existence for years to come. However, this would only happen if stands were unmanaged.</p> <p style="text-align: center;"><i>(Graph Omitted)</i></p> <p>As it is, the USFS intensively manages the BHNF and is proposing to increase logging and thinning under the Phase II Amendment. The goal, as the USFS has stated on numerous occasions, is to reduce tree mortality. Logically, this would mean that forest management would reduce mortality rates, making it even less likely that sufficient large diameter snags will be produced within a reasonable timeframe. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to ensure future creation of enough large diameter snags, logging ultimately removes many of these trees and, in combination with the associated mortality rate reductions, artificially keeps both the numbers of large diameter live trees and large diameter snags depressed (the snags more so). Ultimately, the Phase II Amendment is a recipe for further reductions in already much-reduced large diameter snag densities for decades to come.</p>	<p><i>Standing dead trees are not designated to be cut. Several snag studies have been conducted in the Black Hills. See Phase 2 FEIS, forested ecosystems chapter. See also response to comment 5d-2.</i></p> <p><i>The Phase 2 FEIS forested ecosystems chapter references two snag studies conducted on the Forest. Snag persistence is discussed in this research specific to the Black Hills.</i></p>
5d-4	<p>Snag Densities</p> <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 style="padding-left: 40px;">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</p>	<p><i>Snag density data are presented in Phase 2 FEIS Section 3-2.1 (Tables 3-3 and 3-4) regardless of whether the stands were recently harvested. This information was used to estimate the effects of managing for various structural stages on snag densities. The forest vegetation database shows more than 3 dead trees per acre that are greater than 9 inches in diameter in each structural stage. Therefore, snag recruitment (future snags) will be provided by the diversity of structural stages. The wildlife analysis (Phase 2 FEIS Section 3-3.3 and Appendix C) for snag-dependent species analyzed the effects of meeting the snag objectives, standards, and guidelines on cavity-dependent</i></p>

	<p>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>The existing conditions indicate that snag-dependent wildlife are again essentially living on deficit habitat, a situation that will only lead to declines and potentially extirpations of snag dependent wildlife. Lentile et al. (2000) estimate that snags in the BHNF greater than 10” dbh average only 3.96 per acre.</p> <p style="text-align: center;"><i>(Graph Omitted)</i></p> <p>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 style="text-align: center;"><i>(Table Omitted)</i></p> <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. (2002). And, although snag densities are based on burned areas in some cases, we assume that estimates of snag densities in the BHNF include recently burned areas.</p> <p>Of more concern, however, are the extremely low densities of large diameter snags, or those greater than 15” dbh. The Lewis’s woodpecker and silver-haired bat in particular require high densities of large diameter snags. Currently, snags greater than 15” dbh average 0.7 per acre, while the silver-haired bat requires 8.5 snags per acre greater than 17.32 inches and the Lewis’s woodpecker requires 24 snags per acre greater than 18.7 inches. While the USFS claims that recent fires have created “extensive” areas of snags, the agency has yet to show what the average diameter of these snags are. If snag diameters are similar to live tree diameters on the BHNF, then it is highly likely that densities of large diameter snags even in burned areas are extremely low and likely below the needs of the black-backed woodpecker, Lewis’s woodpecker, and others. Although black-backed woodpeckers have been found in the Jasper burn area, it is interesting to note that populations have been declining significantly in the last two years (Panjabi 2004).</p> <p>Adding to the concern over the inadequacies of existing densities of large diameter snags is the</p>	<p><i>species.</i></p> <p><i>See Phase 2 FEIS, p. III-7 – study by Lentile et al. (2002) cited and summarized.</i></p> <p><i>See Phase 2 FEIS, p. III-239 – populations of black-backed woodpeckers are often irruptive but then decrease as snags decay and beetles decrease.</i></p>
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	<p>fact that snag recruitment will invariably produce fewer and fewer large diameter snags as the BHNF continues to experience extensive logging and thinning. To address the shortages of large diameter trees, there needs to be sufficient numbers of large diameter trees. Yet, the FEIS discloses that, in total, live trees greater than 15” dbh <u>average only 9.4 per acre across the entire BHNF. Trees greater than 20” average only 1.3 per acre.</u> Although if every tree greater than 15” were to die tomorrow and become snags, some of the problems may be solved, this is not what happens in reality. In reality, mortality is a slow process. While the FEIS presents no estimate of mortality rates, we have seen estimates in project-level EAs of less than one tree per acre per year. Thus, even by existing mortality rates, it is likely that sufficient numbers of large diameter snags will not come into existence for years to come. However, this would only happen if stands were unmanaged.</p> <p>As it is, the USFS intensively manages the BHNF and is proposing to increase logging and thinning under the Phase II Amendment. The goal, as the USFS has stated on numerous occasions, is to reduce tree mortality. Logically, this would mean that forest management would reduce mortality rates, making it even less likely that sufficient large diameter snags will be produced within a reasonable timeframe. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to ensure future creation of sufficient densities of large diameter snags, logging ultimately removes many of these trees and, in combination with the associated mortality rate reductions, artificially keeps both the numbers of large diameter live trees and large diameter snags depressed (the snags more so). Ultimately, the Phase II Amendment is a recipe for further reductions in already much-reduced large diameter snag densities for decades to come.</p>	<p><i>See Phase 2 FEIS, p. III-13 – the number of snags on the Forest has increased substantially in recent years due to disturbance events.</i></p> <p><i>See Phase 2 FEIS, pg. III-13 – snag recruitment will be provided by structural stage diversity.</i></p>
5d-5	<p>Snag Persistence</p> <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 relies upon by the USFS suggests that this is not uniformly the case. In a statement by Brian Brademeyer, a local resident of the Black Hills and a civil engineer who graduated from the Massachusetts Institute of Technology, found that, based on Lentile et al. (2002), logging and thinning significantly reduce snag longevity. Based on simple math, Brademeyer found that, based on the data in Lentile et al. (2000), snag persistence is negatively correlated with basal area. In other words, snag persistence decreases as basal area decreases. Brademeyer found, for instance, that an existing 100-year old snag could be expected to persist for less than one year (only 7 months) after thinning a stand down to 40 basal area, even without direct</p>	<p><i>The Phase 2 FEIS forested ecosystems chapter references two snag studies conducted on the Forest. Snag persistence is discussed in this research specific to the Black Hills.</i></p> <p>There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.</p>

	<p>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 <u>decimate</u> existing snag habitat, reducing the future lives of existing snag from 6 years down to 7 months. The statement of Brian Brademeyer is attached to these comments as Appendix B.</p> <p>Because the USFS assumes uniform snag persistence across the BHNF, the agency has prepared a flawed FEIS with regards to the analysis and assessment of impacts to snags and snag-dependent species of wildlife. Because the BHNF is so intensively managed, with most of the forest experiencing logging and thinning within the last 20 years, it can be expected that snag persistence has been significantly reduced. This would explain the extremely low snag densities. In addition, it also casts doubt as to whether proposed snag retention measures are sufficient. Even if snags</p> <p>Other factors that affect snag persistence include snag removal for safety reasons, illegal firewood cutting, and inadvertently knocking down snags during timber harvesting operations. None of these impacts are addressed in the FEIS.</p>	
5e	<p>Old Growth and Old Growth Dependent Species</p> <p>Currently, there is a serious shortage of old growth forest on the BHNF. We consider old growth to be stands of older, dense trees with abundant snags and down woody debris. On a very basic level, this may equate to stands of SS 5. However, stands of SS 5 comprise less than 1.5% of the entire BHNF landscape. This poses serious dilemmas for old-growth dependent species of wildlife, such as goshawk, pygmy nuthatch, and American marten.</p> <p>Indeed, there is a general positive correlation between pygmy nuthatches and the diameter (dbh) of pine trees (Rosenstock 1996, as cited in Ghalambor 2003). Rosenstock (1996) found a general positive correlation between pygmy nuthatches and the diameter of pine trees. Currently, large diameter trees are extremely scarce on the BHNF, likely contributing to the scarcity of the pygmy nuthatch. In addition, American marten are extremely dependent on dense canopy cover and abundant down woody debris, both typically associated with old growth forest (Buskirk 2002). The northern goshawk requires old growth forest for nesting (Erickson 1987, Greenwald 2004).</p> <p>Unfortunately, the Phase II Amendment does nothing to protect or restore actual old growth forest habitat. Although late successional landscapes are designated, these areas do not consist entirely of old growth. Thus, to say that late successional areas provide sufficient habitat is like saying apples are oranges. Furthermore, proposed structural stage objectives are only objectives and do not require that any level of SS 5 be retained or restored. As the USFS is</p>	<p><i>The Forest uses the term "late successional" to depict older forest conditions. The late successional definition used in the Phase 2 FEIS is described in Chapter 2-1.2 and is consistent with 1997 Forest Plan chapter 3. The selected Phase 2 alternative replaced Objective 207 with Objectives 4.1-203, 5.1-204, 5.4-206, 5.43-204, and 5.6-204, which manage for 5% of the ponderosa pine forested land in these management areas in late succession in addition to the Late Succession Management Area (3.7). Effects of the selected alternative are discussed in the Phase 2 FEIS. For more information on effects, see the discussion of brown creeper (management indicator species for late-successional conifer habitat) in Phase 2 FEIS Section 3-3.3.7.2.</i></p> <p><i>Use of the term 'old growth' can be confusing due to variation in definitions used. The Forest used the term 'late successional' as defined by Structural Stage 5. Structural Stage 5 is defined in Chapter 2 of the Phase 2 FEIS. See Phase 2 FEIS Appendix D, Objectives 207, 4.1-203, 5.1-204, 5.4-206, 5.43-204 and 5.6-204.</i></p>

	<p>proposing to increase logging and thinning, the future of old growth forest on the BHNF is cast into doubt and with it, the fate of old growth dependent species of wildlife.</p> <p>Although the USFS may claim that more logging or thinning will lead to the quicker development of old growth, this myopic view of the BHNF is fundamentally flawed. For one thing, while thinning may lead to quicker tree growth, there is no measure in place that ensures that the tree will not be cut for timber at some point down the road. Secondly, old growth is characterized by abundant snags, not simply large diameter trees. Thinning or logging by their nature reduce snags by reducing basal area and reduce future snag recruitment by inhibiting tree mortality. Furthermore, by logging or thinning, the USFS is reducing down woody debris availability, which is also a component of old growth forest. Finally, studies have found that species like the brown creeper, fringed myotis, and northern goshawk are sensitive to disturbance (see e.g., Anderson and Crompton 2002). The brown creeper in particular is not found in logged areas. By logging or thinning stands to create large diameter trees, the USFS is directly rendering such habitat unusable for many old growth dependent species of wildlife.</p> <p>The Phase II Amendment does not explicitly protect and restore old growth forest habitat and as such, fails to ensure the viability of old growth dependent species of wildlife.</p>	
5f	<p>The FEIS is surprisingly silent on the concern of forest fragmentation. This, despite the fact that the Chief specifically pointed to the failure of the 1997 Revised BHNF LRMP and FEIS to appropriately address fragmentation in the context of providing habitat sufficient to ensure viable populations of wildlife. This is further surprising given recent scientific information that has come out not only criticizing the 1997 Revised BHNF LRMP for failing to adequately analyze and assess fragmentation impacts, but also raising serious concerns over the impacts of fragmentation to wildlife in the BHNF.</p> <p>After conducting a thorough analysis of fragmentation in the northern Black Hills, Shinneman and Baker (2000) specifically criticize the fragmentation “analysis” in the 1997 Revised BHNF LRMP, stating:</p> <p>Although the U.S. Forest Service made an effort to duplicate our landscape structure analysis methods in the Black Hills National Forest Final Environmental Impact Statement (Price, <i>unpublished manuscript</i>; USDA Forest Service 1996b), this ‘revised’ version of our research failed to adequately identify important patch characteristics, incorrectly measured landscape structure, did not compare the current managed landscape structure to pre-EuroAmerican landscapes, and ignored the spatial status of old growth forests altogether (D.J. Shinneman, <i>unpublished manuscript</i>). These inadequate analyses, combined with a lack of comprehensive digitized spatial data for forest harvest activities, initial over-estimations of old-growth, and under-estimations of the spatial extent of road impacts, have probably</p>	<p><i>Fragmentation relevance and effects vary by species and their respective habitat needs and mobility. Each alternative offers a different approach to biodiversity and fragmentation. For a discussion of various species see Phase 2 FEIS Section 3-3 and Appendix C. Also please refer to the discussion of fragmentation and related issues in the 1997 FEIS for the Revised Forest Plan, on pages III-247 through 275. The Forest relied on various information sources to analyze the extent to which fragmentation characterized the forest area historically. The Custer expedition photos and reports from the Dodge expedition indicate the Forest’s natural conditions were more fragmented than they are today.</i></p> <p><i>The Phase 2 FEIS disturbance ecology section considers available research, including Baker and Shinneman.</i></p>

	<p>led to the misinterpretations of the current forest structural conditions on the Black Hills. (p. 331)</p> <p>The two make the following recommendations for addressing fragmentation in the BHNF, stating:</p> <p>In contrast to USFS recommendations, our analysis suggests that restoration of the Black Hills National Forest landscape to its range of natural variability will require: (1) restoration and maintenance of some large patches in order to regain large interior areas, (2) restoration of large areas of dense old-growth forest in order to increase rare interior old-growth habitat, (3) a strategy for road closures, as well as careful site selection for new roads, to reduce road edge habitat on the landscape, and (4) a management plan that maintains or restores connectivity between large core areas with similar habitat in order to reduce the degree of habitat isolation for species dependent on habitats such as old-growth forest (e.g., Noss and Harris 1986). (p. 332)</p> <p>As of yet, we are waiting to see the USFS give the findings and recommendations of Shinneman and Baker (2000) any serious consideration. The Phase II Amendment does not attempt to address fragmentation and restore fragmented landscapes. There is no identification of areas with large amounts of old growth that could be maintained and restored, there is no attempt to restore large areas of dense old growth forest (see, Improper Reliance on Goals, Objectives, and Guidelines discussion above), no strategy for road closures, and no attempt to maintain or restore connectivity between large core areas with similar habitat. As responsible opposing views, their scientific findings at least deserve substantial treatment, especially in the context of ensuring viable populations and meeting the diversity mandate of NFMA, and their recommendations deserve full, careful, and objective consideration.</p> <p>In the context of wildlife populations, fragmentation is indeed a serious concern. Habitat fragmentation can isolate and reduce populations of less mobile species, such as Black Hills red-backed vole (<i>Clethrionomys gapperi brevicaudus</i>) and Black Hills flying squirrel (<i>Glaucomys sabrinus</i>), making them more vulnerable to stochastic events, which can in turn be exacerbated by habitat degradation (Wilcox and Murphy 1985, Lande 1993, Ruggiero et al. 1994, Couvet 2002, Carroll et al. 2004). Both the red-backed vole and flying squirrel have been found to be negatively impacted by habitat fragmentation (Nordyke and Buskirk 1991, Waters and Zabel 1995, Beauvais 1997, Martin and Anthony 1999, Reunanen et al. 2000). In addition, the pine marten, a sensitive species on the BHNF, requires dense canopy cover for habitat, also making the species sensitive to fragmentation (Buskirk 2002). In addition, fragmentation raises serious concerns over the genetic fitness of populations of wildlife on the BHNF. Fragmentation can lead to detrimental inbreeding and a build up of mildly deleterious mutations, both of which can impair population survival (Lacy 1987, Couvet 2002).</p>	<p><i>Fragmentation relevance and effects vary by species and their respective habitat needs and mobility. Large tracts of unlogged, mature forest may represent less fragmented conditions for some species, while representing less diversity for others (e.g., grassland species). Abundance and distribution of habitat is discussed for the individual wildlife species for which fragmentation is a concern in Phase 2 FEIS Chapter 3, Section 3-3. Also refer to the 1997 FEIS for the Revised Forest Plan, pgs. III-247 through 275, for a discussion and evaluation of fragmentation.</i></p>
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	<p>On the Black Hills in particular, fragmentation is reported to be negatively impacting the brown creeper, a proposed management indicator species (“MIS”) (Anderson and Crompton 2002). Virtually echoing the concerns of Shinneman and Baker (2000), Anderson and Crompton (2002) state that to ensure protection of the brown creeper across the BHNF landscape, “large tracts of unlogged, mature forest should be retained throughout the Black Hills” (p. 372). The two continue:</p> <p style="padding-left: 40px;">These areas contain the habitat characteristics associated with many timber-gleaning insectivores and ovenbirds. As the landscape becomes more fragmented, the value of large contiguous tracts of dense forest will become increasingly important to maintain populations of interior-dwelling birds. (<u>Id.</u>)</p> <p>Fragmentation therefore warrants thorough and additional consideration and analysis in the FEIS. In the context of maintaining viable populations, the USFS must, as Anderson and Crompton (2002) recommend, retain large tracts of unlogged, mature forest. As proposed, the Phase II Amendment does not do this. And, neither alternative specifically addresses the need to retain mature forest of particular patch sizes. Thus, the ability of the Phase II Amendment to ensure viable populations of species sensitive to fragmentation, such as brown creeper, Black Hills red-backed vole, Black Hills flying squirrel, and pine marten, is very much unsupported.</p>	
5g	<p>Population objectives for management indicator species are not supported by scientific literature or by any other analysis or information. Indeed, recent studies have concluded that to maintain a viable population of a vertebrate species, sufficient habitat should be provided to support at least 7,000 breeding adults (e.g., Reed et al. 2003, 2004). For the black-backed woodpecker and golden-crowned kinglet, the USFS’s proposed population objectives are below 7,000, the minimum viable number as recognized in the scientific literature. It is unclear how the USFS believes it is complying with laws and regulations if its objective is to maintain unviable populations. Similarly, population objectives for yellowthroat allow for 6,000 individuals. Obviously, the number of reproductive individuals would be much lower.</p> <p>Furthermore, it is unclear whether the population objectives are based on total individuals or reproductive individuals. If the objectives are based on total individuals, then the actual number of breeding individuals may be much lower, perhaps lower than 7,000. As it is, the NFMA regulations define viable populations based on number of reproductive individuals. The USFS needs to explain how proposed MIS population objectives relate to numbers of reproductive individuals in order to support the numbers as valid and representative of viable populations.</p> <p>As it is, the USFS has not even shown that current populations of MIS are viable, or in other</p>	<p><i>MIS objectives are based on desired outcomes for each species. Analysis and scientific background are discussed in Phase 2 FEIS Chapter 3, Section 3-3.3.</i></p> <p>Species viability is not evaluated at the project level, but rather at the Forest level as required by 36 CFR 219.19.</p> <p><i>The viability of MIS that are also sensitive species is disclosed in the Phase 2 Amendment Biological Evaluation (Appendix C). The viability of MIS that are not sensitive species is disclosed in the Phase 2 FEIS.</i></p> <p><i>The selection of MIS followed the Regionally approved process identified in Hayward et al. 2001. Monitoring of MIS is to be based on protocols designed to collect the data needed to evaluate the attainment of MIS-specific objectives.</i></p>

	<p>words that a sufficient number of reproductive individuals exist to ensure the species continue to exist well distributed on the BHNF. As a basic critique, the USFS has not even shown that current populations of breeding adults are at 7,000 or higher.</p> <p>The Phase II Amendment also fails to provide for the monitoring of MIS populations as required by regulation.</p>	
5h	<p>The USFS fails to adequately analyze and assess impacts to sensitive species, rendering its viability determinations unsupported and arbitrary and capricious. In particular, for most, if not all, sensitive species, the USFS fails to provide information disclosing the current population sizes of sensitive species, in particular the number of reproductive adults, the current distribution of populations of sensitive species, and fails to disclose whether these populations correlate to a viable population as defined at 36 CFR § 219.19. The agency’s determination that viable populations of sensitive species will be maintained is thus, invalid.</p> <p>The FEIS and the USFS’s viability determinations also seem to rely heavily on an assessment of habitat based only on the amount of forest in a particular habitat structural stage. While not called “habitat capability model,” or “HABCAP,” this method of analyzing and assessing impacts seems to be essentially the same thing. Yet, there is no support of its effectiveness in adequately analyzing and assessing impacts to sensitive species, especially snag-dependent sensitive species. Given that snag densities are below what several wildlife species need, that snag diameters are below what several wildlife species need, and that snag persistence is exceedingly short in managed stands, it is difficult, if not impossible, to understand how a simple measure of how much SS 4C, 4B, etc. exists on the BHNF can provide any insight into the status of habitat for snag-dependent sensitive species.</p> <p>In addition, cumulative impacts are poorly addressed. Of particular concern is that through virtually every project level decision, the USFS discloses that individual sensitive species will be impacted, but that their populations will not be affected. Yet, these impacts to individuals add up and, as cumulative impacts to sensitive species, must be addressed in the Phase II Amendment biological evaluation.</p> <p>Another concern is that the Phase II Amendment does not explicitly require the maintenance of viable populations. No Standard exists that requires the USFS to maintain viable populations. We request the USFS include a Standard that requires that sufficient habitat be provided to ensure viable populations of sensitive species be maintained in accordance with 36 CFR § 219.19 and relevant USFS policy.</p>	<p><i>Available information on sensitive species status, abundance and distribution is presented in Phase 2 FEIS Appendix C. Data on number of reproductive individuals are not complete for most wildlife species on the Forest. The analysis used the best information available.</i></p> <p><i>Structural stage is not the only measurement of habitat considered in the Phase 2 analysis. Features such as snags, downed logs, and riparian habitat were included in the analysis. The analysis also accounted for species-specific conservation measures such as goshawk nest protection, snail colony conservation measures, and bat hibernacula conservation measures.</i></p> <p><i>The Phase 2 FEIS acknowledges that some projects may affect individuals of various species. The cumulative effects sections discuss additional impacts from other federal and non federal actions.</i></p> <p><i>Maintaining viable populations of native and desired non-native plants and animals is required through the National Forest Management Act (Section 6(g)(3) and USDA Departmental Regulation 9500-4. It is not necessary to repeat this requirement as a standard in the Forest Plan.</i></p>
5i	<p>The Phase II Amendment fails to provide sufficient direction to ensure the viability of species of local concern and the FEIS fails to adequately analyze and assess impacts to species of local concern. Of particular concern is that the USFS has not gathered baseline population data for</p>	<p><i>Designation of species of local concern was based on eight criteria incorporating the best available scientific information. This included baseline population data when available in the</i></p>

	<p>virtually every species of local concern to determine whether or not viable populations exist in the first place. The USFS seems to be operating under the unsupported assumptions that populations are automatically viable because the agency says so. This is an invalid approach to ensuring species viability for species of local concern. Because the USFS lacks basic population data and has failed to even assess whether viable populations exist in the first place, the USFS has no basis upon which to conclude the Phase II Amendment and any action alternative will maintain the viability of species of local concern.</p> <p>Furthermore, we strongly recommend the USFS adopt our proposed “Survey and Manage” standards, as proposed in the Conservation Alternative, rather than the species of local concern designation. The Survey and Manage standards have been adopted on other National Forests. A copy of the description of these Standards as applied on other National Forests is attached to these comments as Appendix C so that the USFS can understand how and why they are applied.</p>	<p><i>form of abundance estimates and/or population trend. All alternatives considered in the Phase 2 FEIS include goals, objectives, standards and guidelines to conserve species of local concern and their habitat in a multiple-use context. A discussion of the applicable objectives, standards and guidelines is included in the Phase 2 FEIS, Section 3-3.3.3 through 3-3.3.5.</i></p> <p><i>The "survey and manage" species designation has not been adopted for use in the Rocky Mountain Region.</i></p> <p><i>There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.</i></p>
5j	<p>Marten</p> <p>The Phase II Amendment promises entirely inadequate protection for the marten. Part of the problem is that the USFS characterizes the ponderosa pine forests of the Black Hills as a “low-severity” fire regime. This characterization is inconsistent with the needs of the marten. The marten depends upon complex forest structure near the ground provided by coarse woody debris and/or tree branches and facilitated by long fire return intervals (Buskirk 2002). According to Buskirk (2002):</p> <p>In the West, martens tend to select for moist-site tree species that grow in stands characterized by living branches on the lower boles of trees, abundant coarse woody debris (CWD), and lengthy fire-return intervals. (p. 14) Buskirk elaborates (2002):</p> <p style="padding-left: 40px;">...the accumulation of CWD reflects long fire-return intervals, because large logs result from old trees. Structure near the ground fulfills the need by martens for protection from predators, access to subnivean spaces in winter, and protected resting sites (Buskirk and Ruggiero 1994). (p. 15)</p> <p>Thus, the presence of the marten is an indication that some, if not most, ponderosa pine forest in the Black Hills is in a mixed-severity fire regime, or one characterized by relatively infrequent stand-replacing fires. Although the marten prefers white spruce, Buskirk (2002)</p>	<p><i>The effects on marten are discussed in the Phase 2 Amendment Biological Evaluation (Appendix C). Included is a discussion of spruce habitat and habitat connectivity for marten.</i></p>

	<p>reports that it is impossible for the marten not to utilize ponderosa pine forest, especially more mesic sites, in the BHNF given the extremely low abundance and fragmented nature of white spruce forest in the Hills.</p> <p>The habitat needs of the marten raise concerns that, by pushing for increased logging and thinning and erroneously operating under the assumption that the ponderosa pine forest of the Black Hills should be entirely “open and park-like,” the USFS will push the marten to extirpation. Compounding this is that the USFS has not addressed the impacts of forest fragmentation to the marten and is not proposing any direction to restore fragmented landscapes in the BHNF under the Phase II Amendment. Indeed, no Standard under the Phase II Amendment addresses the need to protect or restore habitat connectivity to ensure the marten persists. As it is, by relying on structural stage objectives, the USFS is essentially disavowing any responsibility to the marten and its habitat and is not meeting its diversity and viability requirements with regards to the marten.</p>	
5k	<p>Northern Goshawk</p> <p>The Phase II Amendment is an utter disappointment with regards to management of the northern goshawk. As proposed, the Amendment takes a huge step backwards in terms of protecting, nesting, post-fledging, and foraging habitat for the northern goshawk. Of particular concern is that habitat is already seriously limited on the BHNF. As discussed above, stands of dense, old growth forest are extremely scarce on the BHNF, large diameter trees are extremely scarce, densities of large diameter snags are extremely low, and disturbance is widespread. Adding to this the recent loss of habitat as a result of fires, nest vandalism, storm damage, and windthrow, the goshawk is facing an uphill battle to survive in the BHNF. These cumulative impacts are not appropriately assessed in the FEIS.</p> <p>In addition, the Phase I Amendment provided entirely inadequate protection for the northern goshawk and its habitat. The lack of substantive nesting habitat protection under the Phase I Amendment is of particular concern because there exists a serious shortage of suitable nesting habitat on the BHNF. Indeed, old growth forest, which is preferred as nesting habitat by the northern goshawk throughout the western United States (e.g., Kennedy 2003, Greenwald et al. in press), comprises less than 1.5% of the entire BHNF and a fraction of this is likely even suitable for nesting. Goshawks in the Black Hills select nest sites that are in even aged, old growth ponderosa pine stands (Erickson 1987). Specifically, Erickson (1987) explained:</p> <p>Generally, goshawks in the Black Hills National Forest can be found above 1550 meters elevation, on gently sloping benches within ponderosa pine stands that face west-northwest. The nest tree can usually be found within 100 meters of a logging road or forest opening. Nest site basal area within the stand ranges from 29.97 m²/ha to 56.32 m²/ha. Mean tree size at the nest site ranged from 19.5 to 41.3 cm (dbh).</p>	<p><i>Northern goshawks are discussed in Phase 2 FEIS Appendix C. The effects from recent natural disturbance processes were considered in the analysis.</i></p> <p><i>The vegetation database for the Forest shows approximately 300 acres dominated by very large, old trees (16”+ diameter and 160+ years old). The database shows approximately 71,000 acres of other very large trees (16”+ diameter, but may be less than 160 years old).</i></p> <p><i>Structural stages – see response to Comment 5h, sensitive species.</i></p>

	<p>Canopy coverage within the stand was found to range from 59.8 to 85.0 percent. Total understory coverage at the nest site varied from 3.65 to 130.3 percent. (p. 27)</p> <p>The Southwest Guidelines indicate ponderosa pine stands in Vegetation Structural Stage (“VSS”) 5 with 40% or more canopy cover and VSS 6, or ponderosa pine stands 16-22” DBH compose goshawk nesting habitat (Reynolds et al. 1992). According to the 2000 Phase I Goshawk Analysis prepared for the Phase I Forest Plan Amendment, this equates to mid-range VSS 5 (i.e., VSS 550 or 560), and VSS 6 (USFS 2000a), which may also represent the nest site characteristics reported by Erickson (1987). Under the Phase I Amendment, PFAs should have 15-25% of their area in VSS 6 and 15-25% of their area in VSS 5. Yet, virtually every designated PFA on the BHNF has no VSS 6 and inadequate VSS 5 (e.g., USFS 2004a, 2004b). As a result of the lack of hard, substantive nesting habitat protection, the USFS has unfortunately actively reduced potential and/or existing nesting habitat in PFAs through several projects, favoring the creation of overly represented, early successional habitats, such as VSS 1, 2, and 3. Although habitat in VSS 1, 2, and 3 may be utilized by northern goshawks, such utilization is contingent upon the existence of adequate and suitable nesting habitat. By managing strictly for early successional habitat and inhibiting the creation of future nesting habitat, the USFS has been ensuring the eventual demise of the northern goshawk on the BHNF.</p> <p>Thus, to ensure the viability of the northern goshawk on the BHNF, the Phase II Amendment must provide for the protection and creation of nesting habitat. Unfortunately, the Phase II Amendment entirely fails to do so. To begin with, the Phase II Amendment provides no protection for goshawk post fledging habitat, which was a key principal of the Phase I Amendment. Although there has been no research on post-fledging habitats in the Black Hills specifically, research throughout the west has consistently demonstrated that the northern goshawk utilize a post-fledging area that consists primarily of old growth forest (Kennedy 2003). It is unclear why the USFS decided to reject managing for goshawk post-fledging areas on the BHNF. Secondly, the USFS relies heavily, if not entirely, upon structural stage objectives to ensure adequate goshawk habitat is protected and/or created across the landscape. As discussed earlier, these objectives provide for no measurable results, are entirely discretionary, and therefore provide no actual benefits to the northern goshawk or its habitat. Thirdly, the USFS is proposing only to protect known nest sites, and then only 180 acres of “best suited” habitat around these nests. This is a wholly irresponsible. For one thing, nothing in the Phase II Amendment requires surveys to ascertain the presence of nest sites, so in all likelihood occupied nesting habitat will be impacted by future logging and thinning. In addition, by limiting attention to only known nest sites invariably means that the USFS will be managing for no nesting habitat. In essence, as known nest sites are lost to fire, windthrow, vandalism, etc. the USFS has no measure in place to compensate that loss through the protection of suitable habitat. Once an active nest site is gone, its loss is permanent and that</p>	<p><i>Goshawks are often difficult to locate during surveys and often alternate nests each year. As such, there will likely always be nests on the Forest that have not been discovered. The structural stage objectives provide nesting habitat (usually structural stage 4B, 4C or 5) well dispersed across the Forest. Specific standards (3108 and 3111) focus some of that nesting habitat around known nests. This approach provides habitat Forest-wide as well as around known nests. The process for conducting surveys for sensitive species is outlined in the Forest Service directives (FSM 2670.43) and does not need to be repeated in the Forest Plan.</i></p> <p>Standard 3111 addresses disturbance around goshawk nests. The standard is written to allow some flexibility because goshawks sometimes build nests within a half-mile of heavily used roads, trails or other facilities. In these cases, the goshawk likely selected the site for other habitat characteristics in spite of the disturbance. Additional disturbance to the goshawk is not desirable, but in some cases halting the ongoing activity may not be necessary.</p> <p>The ecosystem approach for each alternative is discussed in Phase 2 FEIS Appendix C, Section 4-6.10.3.</p>
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<p>habitat will no longer be protected. Ultimately, this will mean the USFS will manage for <u>no</u> goshawk nesting habitat in the BHNF.</p> <p>In addition, the proposed Phase II Amendment does not explicitly prohibit disturbance of goshawk nest sites. Standard 3111 is, to say the least, biologically absurd. To begin with, the Standard only requires disturbance to be “minimized,” so therefore ensures no level of actual protection from disturbance. Next, the Standard only limits disturbance “beyond that occurring at the time of nest initiation.” This Standard therefore lacks any substantive protection. For one thing, there is no monitoring mechanism in place or proposed to ensure the USFS will be able to understand what disturbances were occurring at the time of nest initiation. As it is, it is difficult, if not impossible, to understand how the USFS intends to be able to determine when nest initiation occurs at every active goshawk nest on the BHNF in order to ensure disturbances do not occur “beyond that occurring at the time of nest initiation.” Finally, even if disturbance may be occurring at the time of nest initiation, this doesn’t mean that it is healthy or will not negatively impact northern goshawk.. Kennedy (2003) states, “Human disturbance associated with forest management and other activities may affect goshawks and can cause nest failure, especially during incubation (Boal and Mannan 1994, Squires and Reynolds 1997). Camping near nests has caused nest failure (Speiser 1992)” (p. 144). Thus, even if nests are “initiated,” human disturbance could cause nest failure during incubation or otherwise cause breeding pairs to unsuccessfully reproduce. It is irresponsible for the USFS to allow disturbance around goshawk nest sites period from March 1 through August 31.</p> <p>Of greatest concern is that the Phase II Amendment lacks a landscape approach to goshawk habitat protection. A landscape approach was recommended by experts during the Phase I Amendment (USFS 2000b) and considered during the Phase I Amendment process, but was subsequently rejected by the USFS, partly because the Phase I Amendment was only interim management direction. Why the USFS ignored expert recommendations and refused to propose landscape level habitat protection is beyond us. However, it is a strong sign the USFS has failed to provide adequate protection for the goshawk and its habitat on the BHNF.</p> <p>Compounding the failure to provide adequate nesting habitat through the Phase II Amendment is that the USFS is also failing to provide for adequate foraging habitat. Indeed, by failing to appropriately manage for abundant, large diameter snags, down woody debris, and large diameter trees, the USFS is failing to ensure adequate habitat for prey species. Kennedy (2003) states:</p> <p style="padding-left: 40px;">Although the species on which goshawks prey vary among forest types and regions, there are a few habitat features that appear to be important to a variety of prey species (Reynolds et al. 1992, USFWS 1998b). These features include snags, downed logs (></p>	<p>The ecosystem approach to providing goshawk nesting, fledging, and foraging habitat for each alternative is discussed in Phase 2 FEIS Appendix C, Section 4.6.10.3. Effects on foraging habitat are also discussed in this section. Snags and down woody material are discussed in the goshawk section of Appendix C. Snags are discussed in Phase 2 FEIS Chapter 3, Section 3.2, and also in the goshawk section in Appendix C.</p> <p>Every attempt was made to interpret the goshawk literature correctly. The Phase 2 ID Team consulted with leading goshawk scientists to help interpret available science. A population viability analysis (PVA) model was not used in the analysis because information needed for such an analysis (mortality rates, reproductive rates) are not available for the Black Hills. The analysis was based on habitat requirements and habitat availability expected under each alternative. The analysis considers the dynamic nature of Black Hills ponderosa pine ecosystems (Section 3-2.1 in the Phase 2 FEIS), including natural disturbance processes (Section 3-7 in the Phase 2 FEIS).</p> <p><i>Goshawks are discussed in Phase 2 FEIS Appendix C, Section 4-6.10.</i></p> <p><i>The number of individuals for any species varies annually based on climate, weather, mortality, predation, disease, and other</i></p>
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	<p>30 cm in diameter and 2.4 m long), large trees (> 46 cm in diameter), openings and associated herbaceous and shrubby vegetation, interspersions, and canopy cover. (p. 102)</p> <p>Unfortunately, current conditions on the BHNF are such that snags of sufficient diameters are relatively scarce, large diameter trees are lacking, and down woody debris is not abundant or well distributed. Compounding this problem is that the proposed Phase II Amendment, by prescribing increased logging and thinning, will only exacerbate snag shortages, lead to further reductions in large diameter trees, and inhibit down woody debris recruitment.</p> <p>In addition, even if goals, objectives, or guidelines could provide the habitat the USFS claims, it is unclear whether this will, in fact, lead to viable populations of northern goshawk. Indeed, there is no information suggesting that nesting habitat, as defined by Erickson (1987), will be provided in sufficient patch sizes for nesting or that it will be well distributed across the BHNF. There is no spatial context for the USFS's assertion that sufficient habitat will be provided to ensure goshawk viability. Furthermore, there is no spatial context for population use of habitat on the BHNF and thus, no basis for the USFS to conclude that northern goshawk will even utilize much of the potentially suitable nesting habitat that exists in the BHNF. In fact, studies have criticized the use of simple measures of habitat quality to assess population viability without the use of spatially explicit population models in relation to the northern goshawk (Lawler and Schumaker 2004).</p> <p>Finally, the USFS has failed to demonstrate that northern goshawk populations are currently viable according to regulations. Of particular concern is that reports indicate the Black Hills should be capable of supporting at least 300 breeding pairs of northern goshawk. In an article in the March 1998 issue of Wyoming Wildlife, USFS scientist Richard Reynolds was quoted as saying:</p> <p>I've been out on the Black Hills [National Forest], and they've got an area that's at least three or four times as big as the Kaibab Plateau, and they say, 'We've got birds everywhere!' And I say, 'Well, how many do you have?' And they say, 'Oh, we've got twenty or thirty pairs.' And I say, 'Wait a minute; you've got enough area for probably 300 pairs. (Madson 1998, p. 35)</p> <p>However, the problem with the FEIS is that there is no actual population data even provided that shows a sufficient number of reproductive individuals exist to ensure the species' long-term survival. There certainly is no data suggesting that 300 pairs inhabit the BHNF. Although the USFS cites the number of "active" nests in the Biological Evaluation, there is no information or analysis presented or referenced that shows how such data correlates to a viable population in terms of number of reproductive individuals. Adding to this the failure of the</p>	<p><i>factors. The Forest Service is charged with making a determination based on the best information available. There is always uncertainty because information is always incomplete due to the nature of the data. To eliminate uncertainty would require determining reproductive success, emigration, immigration and mortality rates for each bird on the Forest. This is neither practical nor feasible for goshawks or other Forest species.</i></p>
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	<p>USFS to ensure even basic protection and much-needed restoration of nesting, post-fledging, and foraging habitat, the agency is admittedly failing to ensure the viability of the northern goshawk.</p>	
51	<p>Snail Species of Concern</p> <p>The USFS states in Chapter 1 of the DEA that:</p> <p style="padding-left: 40px;">The Frest Report did not substantiate the allegations of habitat modifications or reference particular areas or habitats where snails were documented to have been lost. Additional surveys have been conducted under the Black Hills Monitoring guide and by researchers. New information suggests that the snail colonies may be dynamic, and that new colonies of snails were located. (p. 1-15)</p> <p>The USFS must be seriously confused. Frest and Johannes (2002) reported visiting hundreds of survey sites throughout the BHNF and described the conditions at every survey site. For many sites, habitat was so degraded, snail species of concern could not be found. In other areas, habitat degradation had obviously occurred, such as a site where poor fence maintenance allowed cattle to trample a snail species of concern colony. Losses of colonies were also reported. Did the USFS even read this report? If not, that would be very disappointing since the agency <u>paid for it</u>.</p> <p>Nevertheless, this sentence is a telling introduction into the incredibly flawed analysis of the Phase II Amendment upon snail species of concern. Compounding this flawed analysis is the fact that the Phase II Amendment provides no mechanism that actually ensures the protection of colonies of snail species of concern. No specific measures are provided. This is a serious departure from previous direction and there is no explanation as to why the USFS has proposed to eliminate protections for snail species of concern. Indeed, other National Forests have taken their duty to protect diversity, including terrestrial mollusks, very seriously (see e.g., Burke et al. 1999). We cannot understand why the USFS has not undertaken a similar effort as Burke et al. (1999) in terms of developing appropriate management recommendations for snail species of concern on the BHNF. Regardless, we recommend that the recommendations of Burke et al. (1999), especially those related to <i>Oreohelix</i> and <i>Vertigo</i> species, be applied to the snails in the BHNF.</p> <p>To say the least, the FEIS presents a paltry analysis of impacts to snail species of concern, especially <i>Oreohelix</i> species of concern. The USFS does not verify its reports of “new colonies,” whether these new colonies are viable are even abundant, and does not explain which <i>Oreohelix</i> species are found at any of these “new” colonies. In fact, the USFS seems to</p>	<p><i>The 1993 and 2000 Frest and Johannes reports were used and referenced in the analysis. The reports serve as valid surveys of snail occurrence and distribution. The Phase 2 FEIS discloses uncertainty associated with the taxonomy of Cooper's mountainsnail because suggested taxonomic changes have not been peer reviewed and accepted via the scientific community.</i></p>

outright reject the proposed taxonomic conclusions put forth by Frest and Johannes (2002). As the two report, the BHNH supports three endemic *Oreohelix* species: The Black Hills mountainsnail (*Oreohelix cooperi*), the Pahasapa mountainsnail (*Oreohelix* n. sp. 1), and Bear Lodge mountainsnail (*Oreohelix* n. sp. 2). Frest and Johannes (2002) provide a detailed discussion as to why they propose these taxonomic distinctions, including comparisons with other related species, anatomical data, and morphometrics. The discussion is similar, if not more thorough, than what is typically found in a published journal (see e.g., Fairbanks 1984). In addition, Frest and Johannes (2002) discuss the obvious concerns over the validity of the *Oreohelix strigosa* species given the fact that the species is not found in its reported type locality. The only reason these descriptions haven't been published is due to a lack of resources—it costs money to publish, so scientists, especially malacologists who are so few to begin with, prioritize their efforts.¹

The FEIS does not even mention the Bear Lodge mountainsnail, nor does the Phase II Amendment propose any special designation. This is of serious concern since only 6 extant colonies of the species are known from the Bear Lodge mountains (Frest and Johannes 2002). Previously, this species was believed to be *Oreohelix strigosa berryi*. There is no explanation in the FEIS as to why the USFS believes the species doesn't warrant conservation attention or why it all of a sudden believes it does not exist. The FEIS further lumps the Black Hills and Pahasapa mountainsnail as one species. No explanation can be found in the FEIS for why the USFS chose to do this. In other words, the USFS has entirely failed to explain why it ignored relevant and substantial scientific information regarding the taxonomy of *Oreohelix* species in the BHNH. By ignoring relevant taxonomic information, the USFS has failed to adequately assess impacts to *Oreohelix* species of concern. This is of particular concern given the fact that snails are considered to be ecological indicator species and attention to their status should be a priority for land managers (Niwa et al. 2001).

While the USFS is obviously abusing its discretion in rejecting scientific conclusions made by the Frest and Johannes (1993 and 2002) reports (indeed, the agency could simply call Dr. Terrence Frest at (206) 527-6764, which is the phone number of Deixis Consultants displayed on the cover of Frest and Johannes (2002)), we feel it is necessary to include in our comments our petition to list the Black Hills mountainsnail under the Endangered Species Act, which was submitted in September of 2003 and is currently being litigated to compel the Secretary of the Interior to review it. This petition is attached as Appendix D. This petition presents a substantial synthesis of the status of this species and its habitat, threats facing the species, and problems in current management. The petition is a collection of the best available scientific information, which the standard used by the Endangered Species Act. Apparently the USFS uses the "best available science the agency likes" standard. In any event, we request the following information be considered as comments on the Phase II Amendment in relation to its ability to protect *Oreohelix* species of concern and specifically, the Black Hills

There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.

	<p>mountainsnail. In particular, we request the comments be used to ensure the FEIS presents an adequate analysis and assessment of impacts to the Black Hills mountainsnail, to ensure the Phase II provides adequate direction, and to ensure the USFS utilizes accurate information to make a well-informed, biologically sound, and legally adequate decision under the Phase II Amendment. We also caution that if the USFS continues to take this tact with regards to rare snails in the BHNF, the agency should expect more petitions to be filed. Indeed, the Endangered Species Act exists for this reason, to ensure agencies do not inappropriately ignore the status of species threatened with endangerment or extinction.</p>	
<p>5m</p>	<p>Mountain Pine Beetle</p> <p>We seriously question the USFS’s assumption that simple reductions in stand density will reduce mountain pine beetle risk on the BHNF. Not only has extensive past logging apparently failed to lessen the risk of future pine beetle infestation, but studies have found that infestation is not a function of stand density in the Black Hills. In a study of mountain pine beetle risk in thinned and unthinned stands on the BHNF, Schmid et al. (1991) found that there appears to be no relationship solely between stand density (i.e., basal area) and mountain pine beetle risk and susceptibility. Schmid et al. (1991) state:</p> <p style="padding-left: 40px;">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 FEIS does not address the possibility that mountain pine beetle risk is not related to stand density and consequently, fails to adequately analyze and assess the impacts of the Phase II Amendment to mountain pine beetle risk. In addition, because risk is not entirely related to stand density, the USFS’s assumptions underlying the Phase II Amendment, namely that logging or thinning are needed to address any purported mountain pine beetle risk, are unsupported.</p>	<p><i>Scientific literature indicates a correlation between stand density and the incidence of mountain pine beetle infestation. Please refer to the Natural Disturbance Processes section of Chapter 3 of the Phase 2 FEIS.</i></p>
<p>5n</p>	<p>Riparian and Wetland Habitat</p> <p>Cumulative impacts to riparian and wetland habitats are not appropriately analyzed or assessed. Despite disclosing widespread loss and degradation, the USFS seems to imply that such losses and degradation are not significant impacts, nor are they affecting the viability of</p>	<p><i>The Phase 2 FEIS analyzed the status and trend of riparian and wetland habitat in Section 3-2.3.</i></p>

	<p>native species. This is especially of concern given that the decline and degradation of wetland and riparian habitats has negatively impacted the northern leopard frog, a sensitive species on the BHNF (Smith 2003). In addition, the best available scientific data strongly indicates riparian and wetland habitat loss and degradation is negatively impacting the Bear Lodge meadow jumping mouse (Center for Native Ecosystems et al. 2004). We have attached comments summarizing the status of the Bear Lodge meadow jumping mouse as Appendix E and request these comments be reviewed for the purposes of ensuring the Phase II Amendment adequately protects wetland and riparian habitat and adequately analyzes and assesses impacts to riparian and wetland habitat.</p> <p>The FEIS therefore entirely fails to adequately analyze and assess the impacts of riparian and wetland habitat loss and degradation. The FEIS seems to assume that current conditions are not negatively impacting native species or their habitats, which is entirely inappropriate. Adding to this is that there are no specific Standards proposed through the Phase II Amendment that requires any level of riparian and wetland habitat restoration and that actually prohibits degradation of riparian habitat. In fact, the Phase II Amendment explicitly allows domestic livestock grazing, logging, road building, and mining in riparian habitats, regardless of the impacts. This does not serve to ensure the viability of native species and their habitats.</p>	<p>Scientific information on the status and trend of the Bear Lodge meadow jumping mouse on the Black Hills was incorporated, as appropriate, into the Phase 2 FEIS. Taxonomic issues and actions to list this species under the Endangered Species Act are outside the scope of the Phase 2 Amendment.</p> <p><i>There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.</i></p> <p>The level of riparian and wetland restoration is a desired condition that is better defined by Forest Plan Objectives versus Standards. Objectives 213, 214 and 215 define these levels in the Phase 2 Amendment. Standards 1301, 1302, 1304, 1305 and 1306 are specifically identified to protect riparian areas, water influence zones and wetlands. Additional Standards that limit management activities, e.g. travel management/roads, grazing, and mining are also included.</p>
50	<p>Water Quality, Failure to Demonstrate Effectiveness of BMPs, Compliance with Clean Water Act and State Water Quality Rules</p> <p>The FEIS asserts that water quality will be protected through implementation of Best Management Practices (“BMPs”) and Watershed Conservation Practices, yet there is no analysis or information provide to support this assertion. Of particular concern is that such measures are inadequate to protect native fish populations, such as those of the lake chub and mountain sucker. Indeed, BMPs and Watershed Conservation Practices do not expressly limit the influx of sediment into streams, do not limit road construction and off-road vehicle use within streams, and do not prohibit logging, domestic livestock grazing, or mining within aquatic habitats that may support populations of mountain sucker, lake chub, or finescale dace. The fact that mountain sucker and lake chub populations have declined (the lake chub precipitously) raises serious concerns that BMPs and Watershed Conservation Practices are indeed worthless in protecting these species and their habitats. Similarly, American dipper declines in the Black Hills are linked to water quality problems (Backlund 2001). The presence or absence of American dipper has been shown to be a reliable indicator of water quality (Feck and Hall 2004), thus its decline should be a strong indication that existing BMPs and WCPs are not adequately protecting aquatic habitats. We have attached our petition to list</p>	<p><i>An assessment of BMP effectiveness was completed in 2003. The findings of this evaluation are disclosed on page 3-457 of the Phase 2 FEIS. Forest Plan standards and guidelines provide protections to aquatic resources in combination with BMPs and watershed conservation practices. Extensive development occurred in the Black Hills following the discovery of gold in 1874. It is inaccurate to compare the current state of aquatic species to the effectiveness of regional watershed conservation practices since the original regional watershed conservation practices were only adopted in December 1996 and BMPs originated under the authority of the Clean Water Act (1977). Ecological changes on the land often are slow to appear and problems created over many decades may take years of effective management to correct.</i></p> <p><i>There are no appendices attached to the comment letter received from Biodiversity Conservation Alliance.</i></p>

	<p>the Black Hills population of American dipper under the Endangered Species Act to these comments as Appendix F and request that the information presented be reviewed to objectively determine whether BMPs and WCPs adequately protect the dipper and its habitat.</p> <p>Furthermore, the USFS has not put forth any information or analysis showing BMPs to be effective when activities are undertaken on steep slopes, in areas with high mass wasting potentials, in areas that have experienced landslides, in recently burned areas, in areas that are already experiencing erosion, or in protecting streams listed under state 303(d) lists (i.e., the impaired list). Such condition are found in the BHNF. Thus, their blanket effectiveness is not only questionable, but is simply unsupported. It is difficult, if not impossible, to understand how their implementation will ensure protection of native fish populations and their habitat and will ensure compliance with state and federal water quality standards.</p> <p>In addition, the impacts of mining-related water pollution to fish and wildlife is entirely overlooked in the cumulative impacts discussions. May et al. (2001) and other studies have found that mining-related pollution is a significant problem in the Spearfish Creek, Whitewood Creek, and Bear Butte Creek drainages. May et al. (2001) specifically state:</p> <p style="padding-left: 40px;">Analysis of water and sediment from Spearfish Creek, Whitewood Creek, and to a lesser extent Bear Butte Creek indicated contamination from various elements associated with gold mining operations in the Black Hills when compared to reference sites. (p. 8).</p> <p>The authors report, “Concentrations of numerous elements in sediment (As, Cd, Cu, Hg, Ni, Pb, Zn) were found to exceed EPA [Environmental Protection Agency] ET [ecotox thresholds], indicating the possibility of adverse ecological affects” (Id.). Clearly, the cumulative effects of mining-related water pollution are relevant, especially in the context of maintaining populations of fish and wildlife within these drainages.</p>	<p><i>[NOTE: the above response also addresses these comments.]</i></p> <p><i>The significance of impacts to native fish are disclosed in the Aquatic Ecosystem section and individual fish species discussions in the Phase 2 FEIS and Appendix C (BA/BE). The FEIS analyzes the effects of implementing Forest Plan standards and guidelines, watershed conservation practices and Best Management Practices that are based on research and current practices that conserve or enhance aquatic habitat to ensure native fish species viability. The effects of non-native fish on native fish are disclosed in the Appendix C, pages 172, 176 and 181 of the FEIS.</i></p> <p><i>A discussion of the effects of past, present and reasonably foreseeable mining activities is found in the Aquatic Ecosystems cumulative effects section in the Phase 2 FEIS.</i></p>
5p	<p>The Phase II Amendment Lacks a Legally Sufficient Monitoring Plan</p> <p>We can find no monitoring plan prescribed under the Phase II Amendment. Thus, we are unclear as to how the USFS proposes to ensure its meets its goals, objectives, standards, and guidelines.</p> <p>Of particular concern is that the Phase II Amendment does not provide for the monitoring of population trends of MIS, which is required by 36 CFR § 219.19(a)(6). In his appeal decision, the Chief specifically chastised the USFS for failing to provide for adequate MIS monitoring, stating:</p>	<p><i>Chapter 4 of the amended Forest Plan addresses monitoring. Species-specific protocols are in the Forest Plan Monitoring Implementation Guide.</i></p> <p><i>Monitoring of MIS is discussed in the Monitoring Approach section of individual MIS discussions on pages 3-224 to 3-299 of the Phase 2 FEIS. Monitoring strategy is shown in Chapter 4 of the amended Forest Plan. More specific protocols are found in the Forest Plan Monitoring Implementation Guide</i></p>

	<p>The Monitoring and Evaluation Strategy in the Revised Plan (Chapter 4) and the Monitoring Implementation Guide for the Plan (Vol. 84, pp. 1166-1222) are not species-specific for any MIS. With no quantified goals and objectives for many MIS and sensitive species or their habitat, and with unclear or un-documented monitoring objectives, it will be difficult to understand the meaning of any monitoring results. A significant purpose of Forest Plan monitoring is to help determine effectiveness of management strategies and to identify needed changes. (p. 51)</p> <p>The Phase II Amendment must provide for the monitoring of population trends of MIS as required by the Chief and as required by regulation.</p>	
5q	<p>The Phase II Amendment Calls for Unsustainable Logging</p> <p>It is indefensible for the USFS to claim that sustainability is beyond the scope of the Phase II Amendment because all information indicates logging is currently unsustainable on the BHNF.</p> <p>Indeed, the allowable sale quantity (“ASQ”) and sustained yield rate were calculated based on a suitable timber base that existed in 1997. This was before the Jasper Fire, Grizzly Gulch Fire, Elk Mountain Fires I and II, Battle Creek Fire, Roger’s Shack Fire, Red Point Fire, and any other fires that occurred after 1997. As a result of these fires, the actual amount of timber available for harvest has decreased significantly. The loss of suitable timber, while not calculated in either the FEIS or anywhere else that we know of, must be around 10% or more. Although burned areas are still included in the suitable timber base, in reality, they support no timber. Thus, they cannot possibly contribute to the suitable timber base, yet the USFS is logging the BHNF as if they do.</p> <p>Therefore, proportionally, the USFS is actually logging more wood from the BHNF than ever before. Although the ASQ and sustained yield may be the same, because the number of trees on the BHNF landscape have decreased, they are, in essence, leading to higher yields. In other words, the USFS is logging at an unsustainable rate on the BHNF.</p>	<p><i>The Phase 2 Amendment did not analyze ASQ or long-term sustained yield. That work was done in the analysis for the 1997 Revised Forest Plan, and was not the subject of the Phase 2 Amendment.</i></p>
5r	<p>One of the stated focuses of the timber sale is to provide for wildlife habitat needs. DEIS at i. Yet there is little in this entire analysis that demonstrates a commitment to this focus item. Indeed, the disclosed adverse impacts to wildlife continue to mount with each new timber sale on the forest and the USFS continues to ignore the impacts. It is also noteworthy that although wildlife habitat needs are one of the stated focuses, none of the significant issues identified concern wildlife or wildlife habitat. While the significant issues identified may have small indirect benefits to wildlife, overall the project will have negative impacts for wildlife. Indeed, the issue of mountain pine beetle risk will certainly have negative impacts on sensitive woodpecker species for which the beetle is a main food source. “Proposals to address fuels and insect concerns could change wildlife habitat features and impact species.” DEIS at 11.</p>	<p>The purpose and need for action does include “...provide for wildlife habitat needs.” The Norwood project provides for wildlife habitat needs by being consistent with the Forest Plan and by meeting other laws and regulations that apply to wildlife.</p> <p>The identified significant issues do address different components of wildlife habitat. Aspen is an important habitat for various wildlife species and increasing aspen through restoration treatments would improve habitat for those species. Ponderosa pine structural diversity also addresses wildlife habitat needs for</p>

		<p>various species that use pine habitats. Mountain Pine Beetle Risk is also an issue which relates to wildlife habitat. Some species utilize dead trees while others utilize live trees. There were no other wildlife or wildlife habitat concerns raised internally, from other agencies, or from the public during scoping, which could not be addressed through project design.</p> <p>See also response 5d-4.</p>
5s	<p>The DEIS states that one of the purposes and needs for the proposed project is to provide for wildlife habitat needs. DEIS at i, iii, 10, Appendix D-Page 1. Yet it is curious that with this stated need and purpose, not a single Significant Issue identified in the DEIS process concerns wildlife habitat or wildlife. The three Significant Issues, which were developed “Through review and analysis of the scoping comments and input,” are: aspen restoration, ponderosa pine structural diversity, and mountain pine beetle risk. No alternative was developed which specifically addresses wildlife habitat needs (unless the USFS considers treatments for mountain pine beetle risk to meet this need), one of the stated needs and purposes of the project. The DEIS must offer a range of reasonable alternatives which meet all the stated needs and purposes of the project, not just a single need of supplying commercial timber.</p>	<p>Refer to response to 5r in regards to the Purpose and Need, as well as issues, as related to wildlife and wildlife habitat.</p> <p>The Norwood EIS considered 4 alternatives in detail and another 4 alternatives which were not considered in detail.</p>
5t	<p>NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives and to discuss reasons for eliminating any alternatives not developed in detail. The DEIS fails to give appropriate consideration to alternatives we put forth in our scoping comments. None of the action alternatives or even the alternatives eliminated from detailed study considered any of the alternatives we put forth in our scoping comments. Yet the USFS claims to have developed the DEIS based on scoping and public input. It is evident that the USFS did not consider scoping comments or public input except to the extent they supported the alternatives already predetermined by the USFS. Nowhere does the DEIS explain how the alternatives we proposed are not reasonable or otherwise not appropriate for detailed analysis. We understand the USFS often has trouble listening to citizens (such as through the Cement timber sale planning process), so although we have explained thoroughly in previous comments why, for instance, retaining stands of 4B and 4C is appropriate and should be considered to ensure sufficient and well-distributed old growth forest habitat in the BHNF and the persistence of wildlife, we will reiterate that we strongly urge the USFS to consider in detail and select this alternative in order to ensure more old growth habitat for sensitive wildlife, like the northern goshawk, black-backed woodpecker, and others.</p> <p>The DEIS also fails to address several other alternatives that we put forth in our earlier scoping comments on the Norwood timber sale. For instance, in our November 14, 2003 comments on the North timber sale and our December 30, 2004 comments on the Sherwood timber sale, we requested the USFS analyze in detail the following alternatives:</p>	<p>Biodiversity Conservation Alliance (BCA) did not provide scoping comments for the Norwood project. Kelly Honors, project leader, spoke to Jeremy Nicholls, previously of Biodiversity Conservation Alliance, several times in August of 2006 in regard to the Norwood project. Ms. Honors called Mr. Nichols because the District had not received scoping comments from BCA by the requested date and this was uncommon. Mr. Nichols stated that BCA would be sending scoping comments in for the Norwood project, particularly because Norwood would be analyzed under the relatively new Phase II direction, but that he had been very busy with other things. In a second phone call, Mr. Nichols called Ms. Honors to ask if it was too late to send comments in and she assured him it was not too late. No comments were ever received. It was shortly after this that the Forest was notified that Suzanne Lewis was the new contact person for BCA.</p> <p>All of the alternatives considered in detail retain stands of 4B and 4C.</p> <p>Because no scoping comments were received from BCA for the Norwood project, the listed ‘alternatives’ were not specifically</p>

	<ul style="list-style-type: none"> • An alternative that does not harvest or thin any stands of structural stage 4C and 4B; • An alternative that addresses fragmentation concerns on the BHNH; • An alternative that proposes no overstory removal, to retain large diameter trees that are more fire resistant; • An alternative that does not allow harvesting of trees greater than 10” in diameter. This alternative will ensure that an adequate amount of larger diameter trees are retained for future snag creation and for the benefit of species dependent upon larger diameter trees; • An alternative that decommissions the maximum amount of roads and ways possible within the project area; • An alternative that designates all stands of structural stage 4C as MAP 3.7. This alternative also proposes a nonsignificant forest plan amendment and will enhance wildlife habitat; • An alternative that proposes to designate all management area prescription 5.1 within the project area as MAP 4.1. This alternative proposes a nonsignificant forest plan amendment and will enhance wildlife habitat; • An alternative that proposes only road decommissioning and closure, but no timber harvesting, thinning, or other vegetation treatments. The DEIS states, for instance, that “[C]losing roads (as proposed) could be beneficial when it comes to livestock management. The likelihood of gates being left open, which increases the chance of livestock being outside the permitted area, would increase as the number of roads increase and with off-road travel. Closing roads using an administrative closure would make access into areas for weed treatment possible while reducing use of those roads. DEIS at 176 <p>Unfortunately, nowhere in the DEIS does the USFS explain why these alternatives were rejected from any analysis, let alone detailed analysis. It is clear that alternatives that do not meet the purpose and need to “provide commercial timber” did not warrant detailed analysis and were summarily dismissed. No alternative analyzing wildlife habitat needs has been considered. The USFS in the DEIS has unreasonably restricted the range of alternatives where the stated purposes and needs include “providing for wildlife habitat needs.”</p>	<p>considered. However, the No Action alternative which was considered in detail, does address most of the listed items. The action alternatives would close all roads deemed unnecessary for administrative or public access. No changes to management area designation were suggested or considered in the alternatives.</p> <p>Refer also to response 5r above.</p>
5u	<p>If the USFS reconsiders any of the alternatives we proposed and still reaches the conclusion that it is unreasonable or otherwise entirely inappropriate, then the USFS must discuss the reasons for eliminating these alternatives from detailed analysis. Additionally, if the USFS reconsiders a 10” diameter limit alternative and still reaches the conclusion that it is unreasonable or otherwise entirely inappropriate, then we request the USFS rigorously explore and objectively evaluate an alternative that prescribes 12” diameter limits and 14” diameter limits. Such alternatives would ensure that larger diameter trees are retained for wildlife habitat, for future snag creation, for future late successional forest creation, and down woody debris recruitment. Although we understand the USFS is proposing to leave some green trees,</p>	<p>Refer to response 5t.</p> <p>Green trees will be retained on all acres treated, except where meadow restoration or hardwood restoration is proposed. The action alternatives will reduce the risk of loss of green trees to mountain pine beetle or wildfire.</p> <p>Refer also to responses 5rr on snags and 5w on late succession.</p>

	<p>we request the USFS consider leaving more green trees and consider leaving green trees larger than 12” in diameter and larger than 14” in diameter as separate alternatives. Consideration of such alternatives will also ensure a well-informed decision that is fully aware of the various environmental trade-offs associated with the decision to implement the Norwood timber sale, as well as the actual environmental impacts of the decision.</p>	
5v	<p>We also question the USFS’s assumption that simple reductions in stand density will reduce mountain pine beetle risk on the BHNF and in the Norwood 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 style="padding-left: 40px;">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 probability of infestation by mountain pine beetle and the extent of mortality from an infestation can be lowered by simple reductions in stand density. This is not an assumption, but a scientifically demonstrated fact. For a review of much of the literature on the subject, see “The effectiveness of vegetation management practices for prevention and control of bark beetle infestations in coniferous forests of the western and southern United States” by C. J. Fettig, K. D. Klepzig, R. F. Billings, A. S. Munson, T. E. Nebeker, J. F. Negro´n , and J. T. Nowak in <i>Forest Ecology and Management</i> volume 238 (2007), pages 24–53. These authors offer the following conclusion, among others (pg. 44):</p> <p><i>“4) Factors involving tree density are consistently associated with the occurrence and severity of bark beetle infestations. Management to reduce stand or landscape-level susceptibility to bark beetles must address factors related to tree density. Accordingly, thinning has long been advocated as a preventative measure to reduce the amount of bark beetle-caused tree mortality and its effectiveness for this purpose is supported by the scientific literature.”</i></p> <p>While acknowledging that a significant outbreak of mountain pine beetle is in progress, the largest such episode of tree-killing in the Black Hills since 1874 occurred in unmanaged stands within which little or no logging had been done. In addition, the risk of mountain pine beetle has been reduced in some areas of the Black Hills by logging. It should be noted that most past logging was not undertaken with the specific and narrow goal to mitigate future mountain pine beetle infestations at the landscape scale. Conditions unfavorable to infestation with respect to stand density must be continued over time against growth if the beneficial effects of thinning are to be maintained. Given an infestation of sufficient size and intensity, any stand at any density can be killed.</p>

		<p>The cited study by Schmid et al. has been misunderstood and its conclusions misinterpreted. Schmid et al. (1991) published a study designed to better understand the underlying mechanism(s) explaining the “differential mortality” resulting from partial cutting. Two general hypotheses have been forwarded to explain the observed reductions in beetle-caused mortality that result from partial cutting --- increased host resistance and a less favorable microhabitat. Schmid et al. investigated the microhabitat hypothesis (see Bartos and Amman 1989) in a series of research papers, of which this is but one. Such studies not only support, but seek to comprehend the relationship between stand density and mountain pine beetle risk and susceptibility.</p> <p>It would be contrary to a large body of scientific knowledge to consider the possibility “that mountain pine beetle risk is not related to stand density”. To reiterate, “Factors such as stand density, basal area or stand density index, tree diameter and host density are consistently identified as primary attributes associated with bark beetle infestations.” (Fettig et al. 2007, pg. 26)</p> <p>Both biotic and abiotic factors in combination must be favorable for large mountain pine beetle infestations to occur, not all which can be manipulated by logging or other human activity. Manipulation of stand density is the most effective tool available to lower mountain pine beetle risk. This is the silvicultural tactic known as “prevention”. Prevention includes treatment strategies designed to change forest conditions that render them susceptible to bark beetle. Prevention tactics implemented before an outbreak occurs are designed to address stand susceptibility across forested landscapes. Prevention strategies encompass long-term treatments that require multiple stand entries. This series of treatments will result in reduced stand susceptibility for many years.</p>
5w	<p>We are very concerned that the USFS is proposing to directly impact and reduce the availability of old growth forest habitat through the Norwood timber sale. Currently, according to the Phase II Amendment Final Environmental Impact Statement (“FEIS”), only around 0.22% of the entire BHNF is considered old growth. This was measured by assessing how much forest is currently in structural stage 5. Furthermore, old growth in the BHNF</p>	<p>No designated late successional stands are to be harvested. Only 40 acres were identified and designated as structural stage 5, late succession. This particular stand fits the definition of late succession in the Forest Plan.</p>

<p>exists as scattered, small stands that are neither connected nor of sufficient size to support many wildlife species. In addition, many stands exist on steep slopes and/or are near roads or campgrounds. This is an extremely low amount of old growth and it is difficult to believe that any direct impacts to old growth forest would not pose significant impacts to this important habitat component, to species dependent upon this habitat (especially sensitive species), as well as to the diversity of plant and animal communities in the BHNF.</p> <p>It is disturbing that of the total of 42,252 acres in the project area, only 40 acres contain old growth stands (.0009%). DEIS Table 3.12. Just as disturbing is the fact that all the old growth trees are ponderosa pine, even though spruce, aspen, and birch are also found on the project area.</p> <p>Also of concern, however, is that the proposed action seems premised on the assumption that the entire ponderosa pine forest of the BHNF is naturally “open and park-like,” and that, to “restore” forest health and/or address fire risk concerns, extensive logging and thinning is necessary. Such an assumption, while partially true for portions of the BHNF, is not universally valid and reflects the USFS’s attempt to selectively utilize science in the development of the Norwood timber sale.</p> <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, 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>Schoennagel 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</p>	<p>Definition of Structural Stage 5 (Late Succession) from page 68 of the Phase II Amendment: This structural stage is characterized by very large trees (16+ inches DBH). Trees are at least 160 year in age; ponderosa pine that reach this age are commonly referred to as “yellow barks.” Late succession ponderosa pine may occur in dense stands, but may also grow in the open or in “park-like” stands (Mehl 1992).</p> <p>Aspen, birch, and spruce were not considered in the late successional definition. Refer to response to comment at 5e.</p> <p>Additional information on late succession has been added to the EIS, see page 101.</p> <p>The proposed action is not based on an assumption that the entire Black Hills historically had frequent, low-intensity fires. Currently, there are three general types of Fire Regimes in the Black Hills: Frequent, Low-Severity Fire Regime; Infrequent, High-Severity Fire Regimes; Mixed Severity Fire Regimes. The EIS has been edited to better clarify this point (see pages 85 and 86). The EIS also states on page 87 that “Evidence of past fires in the northern area is generally characterized by small, low intensity surface fires. However, given the right conditions, stand-replacing fires could occur in this area.”</p> <p>Specific literature cited in this comment including Brown 2003, Graves 1899, McAdams 1995, Shinneman and Baker 1997, was cited in the Phase II Amendment FEIS, which in turn was cited in this document with regards to this subject matter. All other references cited in this comment have been considered.</p>
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ponderosa pine stands at low to mid elevation (Veblen and Lorenz 1986, Mast et al. 1998, Kaufmann et al. 2000, Ehle and Baker 2003).

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)

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:

The western yellow pine of the Black Hills has a peculiar habit, when the old forest has been killed or cleared away, of reproducing in dense thickets. I say this is a peculiar habit because it is unlike the behavior of the same pine in forests farther west where the seedlings will not stand crowding, and come up sparsely. But in the Black Hills the western yellow pine has acquired a characteristic of the lodgepole pine in that the seedlings come up in dense stands crowding each other, yet clinging tenaciously to life until growth practically reaches a stalemate....Some of these dense stands may be found where the trees are two hundred years old and the deadlock persists.

The DEIS does not seem to reflect scientific views suggesting the ponderosa pine forests of the BHNF likely fall within a mixed-severity fire regime despite supporting scientific evidence. This is supported by the fact that few of the studies we cite are not referenced in the DEIS Bibliography and Literature Cited section, suggesting that USFS specialists have not even consulted these sources. Schoennagel et al. (2004) cite the ponderosa pine forests of the Black Hills as an example of a mixed-severity regime. In any event, the proposed actions do not seem to be based on a serious or objective consideration of the fact that the ponderosa pine forests of the BHNF may be more diverse.

The USFS in past timber sales has relied heavily on the work of Peter Brown to refute the findings of Shinneman and Baker (1997), as well as the notion that the Black Hills likely experienced stand-replacing fires and was not universally “open and park-like.” We note that Brown’s work is not included in the Bibliography and Literature Cited section of the

Norwood DEIS, so we assume that his work was not relied upon in analysis for the DEIS. If the USFS is continuing to rely on Brown's work, this reliance is misplaced, as Peter Brown's dissertation suggests otherwise. Brown (2003) states:

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)

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.

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:

The uncertainty we identify in fire-history results suggests that present concepts of the role of fire in maintaining the structure of ponderosa pine forests are less certain. Surface fire is still very important to these forests. However, the longer mean FIs [fire return intervals] and fire rotations that certainly occurred, and the spatially patchy nature of fire, somewhat diminish the magnitude of control of forest structure by fire relative to present conceptions of fire's importance in ponderosa pine forests. (p. 1223)

The USFS has yet to address the findings of Baker and Ehle (2001) as they relate to the uncertainty in surface fire history studies that have been done in the BHNF. This alone suggests the BHNF has not appropriately developed proposed actions that truly meet the purpose and need, or that the purpose and need itself is fatally flawed.

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.

Baker and Ehle (2001) relates to the uncertainty in surface fire history studies that have been done in ponderosa pine forest in the western United States, not specifically in the Black Hills. A broad range of literature, both prior to and after this publication, has been examined and therefore we believe the best available science has been reviewed with respect to this topic. Please refer to the Best Available Science addendum and the references in the Fire/Fuels Specialist Report for specific works cited.

The range of natural variability in the Norwood assessment was determined using the term *condition class*. Condition class has been developed to describe the degree to which the composition and structure of plant communities has departed from the historic fire regime. As stated in the Fire/Fuels Specialist Report, "The coarse-scale national data (Schmidt et al. 2002) characterize the Black Hills as primarily Condition Class III. (EIS page 86)" which by definition has been significantly altered from their historical range. According to the Phase II FEIS "Under these conditions the goals and methods of fuel reduction and ecological restoration may converge. Restoration of open, low density forest stands and surface fire regimes over portions of the Black Hills landscape is desirable to meet ecological objectives and to reduce fire hazard." FEIS pg. III-341.

<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 Norwood 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 Norwood timber sale area could therefore be seriously detrimental to the health of the BHNF. As Schoennagel et al. (2004) state, “...current fire regimes and stand densities in mixed conifer forests are <u>likely to be within the historical range of variability, or at least are not likely to be as far outside this range as those in the dry ponderosa pine forests discussed above</u> (Veblen 2003)” (p. 671, emphasis added). The authors go on to state:</p> <p style="padding-left: 40px;">Fuel-reduction treatments (mechanical thinning and prescribed burning) may effectively reduce fire severity under moderate weather conditions, but these treatments <u>may not effectively mitigate fire behavior under extreme weather conditions and may not restore the natural complexity of historical stand and landscape structure.</u> (p. 673, emphasis added)</p> <p>Coupled with the findings of Shinneman and Baker (1997) and Baker and Ehle (2001), as well as other studies that have documented mixed-severity fire regimes in other ponderosa pine forests (e.g., Ehle and Baker 2003), the best available scientific information strongly indicates that efforts to control or alter future fire behavior through fuels reduction treatments will not only be ineffective in the Norwood 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> <p>All in all, the DEIS and Norwood 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> <p>Furthermore, we question how the BHNF assessed impacts to late successional forest. In other words, how did the BHNF determine that impacts to late successional forest would not be significant? We are also concerned that the DEIS fails to adequately analyze the cumulative impacts to late successional forest. For instance, although the DEIS claims there would be no adverse cumulative impacts, wouldn’t the timber sale, in harvesting stands of SS</p>	<p>This topic is discussed in more detail in the Phase II Amendment FEIS, pages III-338 through III-343.</p> <p>Additional information has been added to the Fire/Fuels Specialist report and EIS to further clarify on fire regimes.</p> <p>The Norwood analysis considered the best available science. Resource specialists have reviewed all known pertinent literature including the citations provided by Biodiversity Conservation Alliance.</p>
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	<p>4C and 4B, affect the future abundance and distribution of old growth forest? Why wasn't this cumulative impact considered?</p> <p>Regardless of the BBNF's assumptions about old growth on the Black Hills, it is undeniable that the Norwood 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 is also important given that scientific studies have determined the Black Hills once naturally supported more old growth forest (see e.g., Shinneman and Baker 1997, Baker and Ehle 2001).</p> <p>Finally, although the USFS claims that under the Phase II Amendment, old growth will increase, it's important to note that under the Norwood timber sale, old growth will not increase. At best, old growth will remain at 40 acres under the action alternatives if old growth is not accidentally dropped. This seems to indicate that the USFS erred in concluding the Phase II Amendment will actually lead to increases in old growth forest.</p>	<p>It is true that the action alternatives in Norwood would not immediately create new late succession stands as a result of the proposed activities. Late succession develops over time. Please refer to page II-3 in the EIS for a discussion on late succession.</p> <p>Refer to response to comment 5e and 5w.</p>
5x, 5y, 5z, 5aa and 5bb	INTENTIONALLY BLANK	
5cc	<p>The DEIS discloses that "some aspen stands do not seem to be healthy in the Norwood analysis area." "Cattle, elk, and deer browse continually on the aspen regeneration causing the young aspen to remain short and shrub-like." Other symptoms are appearing in aspen foliage which suggest diseases are attacking aspens as well. DEIS at 63. Clearly, inclusions of pine and spruce in aspen stands are not the only issue for aspen stand health. Taking a single treatment approach of removing pines and spruce will undoubtedly not correct all, if any, of the issues facing aspen stands on the project area. We recommend that the USFS analyze the impacts of livestock grazing on aspen stands. The most recent range condition, trend, and inventory for the area was conducted in 1994. The USFS should also analyze the infestations to determine the cause and propose treatments which will be effective. We disagree that removal of pines and spruce alone will ensure healthy aspen stands.</p>	<p>Aspen is discussed on pages III-28,29 in the EIS. The cumulative effects analysis considered livestock grazing. Refer to Appendix E for a listing of past, present and future activities considered in cumulative effects analyses.</p> <p>The Norwood project does not propose that removing conifers from aspen stands will ensure healthy aspen stands. Removing conifers from aspen stands provides a better growing environment for aspen by reducing competition for light, moisture, and nutrients.</p> <p>The No Action Alternative would forego removing conifers from aspen stands.</p> <p>Insect and disease surveys in the Black Hills are conducted by Forest Health personnel from the Rapid City Service Center and are outside the scope of this analysis. Forest health surveys on aspen & birch, forest-wide, are tentatively planned to begin in the summer of 2007 (Bill Schaupp, pers comm.).</p>
5dd	<p>Aspen restoration is a focus of the stated Purpose and Need. Is aspen restoration feasible, given current drought conditions? Has or will analysis be done with this in mind?</p>	<p>Aspen restoration is simply removing conifers from aspen stands. This reduces conifer competition which provides more light, moisture, and nutrients to the stand which promotes</p>

		sprouting.
5ee	It is also notable that the percent increase in aspen stands under the proposed action (Alternative 2) will be only 8%. Alternative 3 would achieve a 22% increase in aspen stands. Since aspen restoration is one of the 3 significant issues identified for the project, we would expect this issue to be addressed more aggressively in the proposed action. We reiterate that the primary purpose of the project appears to be commercial timber harvest. The DEIS and Alternative 2 would not meet the purpose and need of the project.	Alternative 3 was created to address the aspen restoration issue. Alternative 2 was developed prior to issue identification. It does meet the purpose and need for the Norwood project.
5ff	<p>The DEIS indicates that Cooper’s mountainsnail is “found primarily on the north slopes of spruce sites.” DEIS at 64. Yet in surveys conducted in 2003 and 2004, mountainsnail shells were found in variable habitats in spruce, ponderosa pine, and grassland. We are concerned that only a portion of the project area has been surveyed for Cooper’s mountainsnail, presumably just those areas thought to be primary habitat. In light of the fact that shells were found in varied habitats such as ponderosa pine and grassland, and that the species is a R2 sensitive species, it is imperative that the entire project area be surveyed for the presence of Cooper’s mountainsnail and other <i>Oreohelix</i> snail species. Without baseline data on the presence (or absence) of the species on the project area, it would be impossible to analyze the impacts of the action alternatives and to determine whether or not the impacts would be significant. We question whether there will be adequate regulatory mechanisms to ensure protection of the Cooper’s mountainsnail, thereby preventing a need to protect the species under the Endangered Species Act.</p> <p>It is inappropriate to conclude, as the DEIS does, that all Action Alternatives are consistent with Forest Plan Standard 3103 to ensure protection of sensitive snail species, particularly in light of the disclosure in the DEIS that the species “may be present in sites not surveyed and therefore may be impacted by the Action Alternative treatments ” and that “unknown snail colonies could be affected by the Action Alternatives.” DEIS at 164. We reiterate that full analysis of the Cooper’s mountainsnail has not been conducted and the DEIS is therefore flawed. As a sensitive species, the Cooper’s mountainsnail, and other <i>Oreohelix</i> species found on the project area, are entitled to the same protections as listed species.</p>	<p>Standard 3103 states, “Manage known sensitive species and species of local concern snail colonies...”.</p> <p>Known colonies of R2 sensitive <i>Oreohelix</i> snails will be maintained/conserved in all action alternatives.</p> <p>No SOLC snail colonies have been located in the project area.</p> <p>No other <i>Oreohelix</i> species of snail was found in the project area.</p> <p>Refer to response to comment at 5l.</p>
5gg	The MIS analysis and assessment fails to present adequate population trend data. For example, for the brown creeper, the DEIS states only that observation data reveals no obvious upward or downward Forest-wide population trend. What does this mean? When were the observations made and what methods were used? Were population counts made and, if so, do they indicate viable populations Forest-wide? Information for the black-backed woodpecker in the DEIS indicates that there is a decreasing population trend over the past few years, their habitat will be reduced, and the potential for their habitat in the future will be reduced under the proposed Action Alternatives. Yet the USFS concludes that their “abundance is expected to exceed levels which would cause concern for viability . . .” We have the same or similar concerns about other MIS species. The DEIS disclosures do not support the conclusions.	<p>Concerning the brown creeper- refer to the Forest FY2005 monitoring and evaluation report. Habitat trend is stable. The Rocky Mountain Bird Observatory conducts bird counts in the Black Hills. These counts are referred to in Wildlife Report. The RMBO is in the literature cited section under Panjabi and Beason in the Wildlife Report and the Norwood EIS.</p> <p>Concerning the black-backed woodpecker, the long-term habitat trend (10-25 years) shows a large increase but more recently habitat trend (last few years) is stable or slightly decreasing.</p>

		<p>Population trend showed a large increase and then a decrease. Refer to USDA Forest Service FEIS for Phase II Amendment, 2005, pp. 238-246.</p> <p>Viability should not be a concern in the future due to snag standards in place to ensure habitat for this species and future wildfires and bug outbreaks(creating habitat) are expected to continue across the Forest.</p> <p>Refer to the FEIS for Phase II (Emphasis Species) on other MIS species. Refer to response to comment at 5e.</p>
5hh	<p>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 Norwood timber sale. Additionally, the DEIS fails to even explain whether a viable population of fringed myotis, Townsend’s big-eared bat, American marten, Northern goshawk, flammulated owl, American three-toed woodpecker , northern leopard frog, Black Hills redbelly snake, mountain sucker, cooper’s mountain snail, 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, 2001 Phase I Amendment, or 2005 Phase II Amendment explain what constitutes a viable population of marten, goshawk, or black-backed woodpecker, and other species, and whether viable populations actually are in existence. The BHNF has a duty to determine and disclose information regarding viability if it is going to assert that the Norwood timber sale will not jeopardize the viability of these species.</p> <p>The failure to disclose whether sensitive species are currently viable is further disconcerting since scientific studies have clearly established general concepts of what constitutes viable populations of vertebrate species. For instance, Reed et al. (2003) generally found “that a minimum habitat area capable of supporting approximately 7000 sexually mature adults is required to maintain long-term minimum viable populations of vertebrates in the wild” (p. 27). Given this scientific information, we request the Forest Service explain whether enough habitat exists to support viable populations of sensitive species and whether viable populations even exist.</p>	<p>Refer to Norwood BA/BE for determinations and rationale for R2 sensitive species. Species viability is discussed in these sections.</p> <p>Species viability was evaluated in the Phase II Amendment. Refer to the Black Hills National Forest Phase II Amendment Final Environmental Impact Statement- Appendix C Biological Assessment/biological Evaluation pp. 153-275.</p> <p>Viability is addressed at the Forest scale in the Phase II FEIS and the Norwood Project is consistent with the Forest Plan as amended by Phase II.</p> <p>Refer to response to comment at 5b and 5g.</p>
5ii	<p>Forest Plan Objective 221 states that the BHNF will “[C]onserve or enhance habitat for R2 sensitive species and species of local concern.” The DEIS divulges that under all Action Alternatives the preferred nesting habitat for northern goshawk would decrease. DEIS at 159, 165. The Action Alternatives would set aside 183 acres—this is .004% of the project area—for goshawk nesting habitat, the existing Bear Canyon nest area, but would continue to destroy other suitable habitat for goshawks. Yet the DEIS states that 144 sites with potential suitable</p>	<p>The Forest Plan provides additional direction for the Northern Goshawk. Standard 3108 refers to identification of nest areas, of at least 180 acres, around historically active nests. The Bear Canyon nest territory is the only historical nest territory in the project area and 183 acres have been identified for nesting.</p>

	<p>nesting habitat were surveyed in the project area. Forest Plan Objective 221 does not state that the USFS should conserve or enhance <i>existing nesting habitat</i> for goshawks; it directs that habitat must be conserved or enhanced, whether there are goshawks on it or not. The USFS should therefore protect more of the project area for goshawk habitat than the single active nest area. The Action Alternatives in the DEIS would violate FPO 221. The DEIS fails to disclose if historically active nest sites or territory occur in the project area. If they do, then that acreage must be excluded from the project area. The cumulative impacts discussion also entirely fails to discuss the impacts of recent fires, which have affected well over 10% of the entire BHNF. We are very concerned that fires have limited the availability of nesting habitat and that the Norwood timber sale could pose significant cumulative impacts to goshawk nesting habitat.</p>	<p>In all action alternatives some SS 4B and 4C sites are deferred from treatment. These sites may be suitable/potential goshawk nesting habitat.</p> <p>Refer to the Norwood BA/BE for a more thorough analysis of the northern goshawk. The potential for impacts from wildfires are mentioned in the analysis. None of the recent fires have impacted historic goshawk nest areas in the project area. The cumulative effects analysis for this project was not completed for the entire Black Hills.</p> <p>Refer to response to comment at 5k.</p>
5jj	<p>We are also very concerned that, given the impacts of recent fires, timber may be harvested from the Black Hills at an unsustainable rate and may be negatively affecting sensitive species like the northern goshawk and others. This concern derives from the fact that the current Allowable Sale Quantity and sustainable yield calculations were based on a suitable timber base that included areas that have been entirely burned and no longer contribute any actual timber to the suitable base. Proportionately, less timber is now available in the BHNF, yet all indications are that the USFS harvesting at or near the same rate allowed under the 1997 Forest Plan. It is difficult to see how maintaining the status quo in this case can possibly meet NFMA’s sustained yield mandate and/or adequately protect wildlife according to laws and regulations. We request the USFS fully explain how it can possibly protect wildlife dependent on old growth and/or relatively undisturbed forest habitats in light of strong indications that timber is being harvested at an unsustainable rate from the BHNF.</p>	<p>Reference Forest Plan Amendment FEIS 3-8.3 (p.111-382-385), Appendix B 2.1 (p.B-9) and November 1, 2006 W.O. Appeal Decision letter to R2 RF.</p> <p>Refer to response to comment 5hh on sensitive species and comments 5e and 5w on late succession. Refer also to response to comment at 5q.</p>
5kk	<p>We also question how the BHNF assessed impacts to northern leopard frog, flammulated owl, and Black Hills red-bellied snake. The DEIS discloses that timber harvest, slash/fuels disposal projects, and disposal of existing down woody material will continue to reduce adult foraging habitat for the northern leopard frog and adversely affect dispersal. Similarly, timber harvesting, fuel treatments, and thinning may adversely alter habitat where the Black Hills redbelly snake is present. Although the USFS denies that there is a flammulated owl population in the Black Hills, it nevertheless has been recently observed in the Black Hills, suggesting that a population may exist. The DEIS reveals that all Action Alternatives “could cause direct effects to the flammulated owl . . .” It is unclear whether Forest Plan Standard 3116 will be complied with regarding these species, but we are doubtful. Although the DEIS claims that this Standard will not be violated, there is no information or analysis presented in the DEIS to suggest this is accurate.</p>	<p>Standard 3116 states “Avoid creating barriers (e.g., new open roads) between red-bellied snake hibernacula and wetlands”.</p> <p>This standard applies to the snake specifically and it will be followed under the action alternatives.</p> <p>Timber harvest and vegetative treatments should not decrease foraging habitat for the leopard frog. Grasses and insects may increase due to the treatments.</p> <p>There are numerous Forest riparian standards and guidelines that will be followed under any of the action alternatives. BMPs will also be enforced. Therefore riparian areas will be protected from many activities. Any areas found to have sensitive species present such as the leopard frog and/or redbelly snake would maintained. Refer to Wildlife Specialist report “Riparian</p>

		Habitat” section for objectives, standards and guidelines. Refer to the BA/BE for the Norwood Project for more analysis on R2 sensitive species, and to response to comment at 5o.
5ll	The analysis and assessment of impacts to sensitive species is also lacking in that it fails to disclose how past, present, and reasonably foreseeable timber sales impact these species. Of particular concern is that past timber sales, such as Moon, Mallo, and Stateline II, have likely impacted individuals of these species. Indeed, in virtually every biological evaluation prepared for every timber sale on the BHNF, the USFS concludes that individuals of these species will be impacted. These impacts add up, or are cumulative, and must be considered in light of the direct and indirect impacts, as well as the USFS’s duty to maintain viable populations of native vertebrate species.	Direct, indirect and cumulative effects to R2 sensitive species are analyzed in the Norwood BA/BE. Past timber sales including Moon, Mallo and Stateline II were considered in the analysis. Viability for these species is also discussed as well as in the Phase II Final Environmental Impact Statement Appendix C. Refer to response to comment 5hh.
5mm	We raise the same, or similar, concerns with respect to Species of Local Concern (SOLC), particularly Atlantis fritillary, sharp-shinned hawk, Cooper’s hawk, pygmy nuthatch, American dipper, and northern flying squirrel, that we raised above in our comments on Sensitive Wildlife. The analysis reveals negative impacts almost across the board for SOLC from the proposed Action Alternatives, as well as those which occurred from past timber and grazing activities. It is unclear how the DEIS can conclude that the Action Alternatives will not result in a loss of viability nor cause a trend toward federal listing. These cumulative impacts are simply glossed over, with the BHNF having no idea whether viable populations of these species currently exist or what degree of impacts will cause loss of viability. We again remind the USFS of its duty to maintain viable populations of native species under the forest plan.	For these SOLC species the Environmental Impact Statement for the Phase II Amendment determined that they should persist across the Planning Area if Forest Plan standards and guidelines are followed. The action alternatives would follow these standards and guidelines. Therefore these species are likely to persist on the Forest. Loss of viability and trend toward federal listing are discussed in determinations for R2 sensitive species. Refer to response to comment 5hh.
5nn	While the USFS has claimed that the Black Hills red-backed vole is widespread and abundant on the BHNF, the agency has not come forward with any supporting documentation or analysis. There is no mention of this mammal subspecies whatever in the DEIS, even though it is very likely an important prey species on the forest. It is incumbent upon the USFS to address impacts to this mammal and to fully protect the species and its habitat. This has not been done.	The red-backed vole is not currently an R2 sensitive species, Black Hills National Forest management indicator species, or a species of local concern. These are the species that are analyzed in the Wildlife Specialist report and BA/BE, along with migratory birds and Partners in Flight birds (in Wyoming).
5oo	We are concerned that no analysis was conducted for impacts to the black bear and its habitat. While the USFS persists in its claim that there are no black bear on the BHNF, the South Dakota Game, Fish and Parks Department acknowledges reports of bears in the Black Hills and a bear track has been verified in the state. The SDGF&P has begun developing protocol for dealing with black bears, while the USFS continues to hide from the issue. In our scoping comments we requested that the USFS consult with the SDGF&P and other concerned agencies to determine the potential existence of black bears on the BHNF. The agency must protect bear habitat to ensure that if, or when, the species is restored to the BHNF, it can establish stable and viable populations with adequate habitat.	The black bear is not currently an R2 sensitive species, Black Hills National Forest management indicator species, or a species of local concern. These are the species that are analyzed in the Wildlife Specialist report and BA/BE, along with migratory birds and Partners in Flight birds (in Wyoming).
5pp	Two streams in the project area (Beaver Creek and Cold Springs Creek) support fish and a third stream (Cold Creek) is marginal fish habitat. Although fish species are mentioned	The mountain sucker is analyzed in both the Wildlife Specialist Report (as an MIS) and in the Norwood BA/BE (as an R2

	<p>incidentally in several places in the DEIS (e.g., sedimentation, MIS species), there is no separate analysis or assessment of fish species in the project area. We find this disturbing, particularly in light of the disclosure that rainbow trout may now be extirpated from Cold Springs Creek. DEIS at 102. It is hard to understand how the USFS can claim it is meeting Forest Plan Guidelines for riparian health and Objective 219, when a native fish species has become extinct in this part of its native habitat within a 10 year period.</p>	<p>sensitive species. The mountain sucker is a native species to the Black Hills whereas the rainbow trout is an introduced species. Trout were introduced for recreational fishing and are not currently a Black Hills MIS, R2 sensitive species or a SOLC.</p> <p>The rainbow trout in question in Cold Springs Creek were stocked and may not be reproducing in the wild. The condition of the stream has been severely impacted through management on the private land (grazing and spruce eradication). The short piece of stream flowing through Forest Service land is in good condition with willows and spruce providing necessary habitat for fish species.</p>
5qq	<p>The Phase II Amendment inappropriately relies upon Objective 211 to ensure sufficient snag densities across the BHNF. As an “objective,” however, this requirement fails to provide any protection for snag-dependent wildlife. Indeed, “objectives” are voluntary courses of action that impose no requirement for the USFS to actually maintain sufficient snag densities.</p> <p>However, even if it were appropriate for the USFS to rely upon Objective 211, Objective 211 is flawed because it fails to ensure sufficient habitat is provided to ensure viable populations of snag-dependent wildlife. <u>Objective 211 requires the USFS to ensure only 3 snags per acre.</u> The USFS itself recognizes, however, that many wildlife need up to 8 or more snags per acre across the BHNF. Sensitive woodpecker species, like the black-backed woodpecker, require over 24 snags per acre in burned habitat (Anderson 2003).</p> <p>The USFS claims that “[I]f 3 snags are provided on average, some areas will have none or few [snags]; other areas will likely have 6, 8, or more snags per acre (from fire, insects, disease, etc.)” Phase II Amendment FEIS at D-34. This claim is unsupported. For one thing, in selecting Alternative 6 as the Phase II Amendment, the Regional Forester explicitly stated that the goal of the Amendment would be to reduce the risk of fire, insect, and disease. It is contradictory for the USFS to claim that “fire, insects, disease, etc.” will provide sufficient snag habitat when the whole purpose of the Phase II Amendment is to reduce the occurrences of these natural events.</p> <p>Second, and as a practical matter, if the USFS is only required to maintain an average of 3 snags/acre, there is actually nothing in the Phase II Amendment that requires the agency to maintain up to 6 or 8 snags/acre on any portion of the BHNF. As the USFS itself states, “some areas will have none or few [snags][.]” Phase II Amendment FEIS at D-34. This turns 36 CFR § 219.19 on its head and flatly contradicts the Chief’s 1999 decision on appeals of the BHNF Revised LRMP. Not only does Objective 211 fail to ensure a sufficient amount of snag habitat to ensure the viability of native species, like the black-backed woodpecker and</p>	<p>Refer to response to comment 5d-1, 5d-2, 5d-3, 5d-4, 5d-5 on Phase II snag direction, 5c on Forest Plan Objectives and 5rr on snags.</p> <p>Black backed woodpeckers is discussed in the EIS on pages 114-118 and the American three-toed woodpecker is discussed on pages 172 and 173 in the EIS.</p>

5rr	<p>American three-toed woodpecker, but it fails to ensure that habitat is well-distributed.</p> <p>But even if Objective 211 were adequate to snag habitat to ensure species viability, the DEIS reveals that snag densities in the project <i>don't even meet the low requirements of Objective 211</i> DEIS at 100. Snag densities in the project area ranged from 0.58 to 2.36 per acre. This is unacceptable as it violates not only the already inadequate Objective 211, but also the duty of the USFS to maintain viable populations of native species on the BHNF.</p> <p>Although the USFS may claim that, through the Norwood timber sale, all snags will be retained, this is actually not the case. According to the DEIS, the cutting of snags will be allowed for "safety hazards during operations." DEIS at 101. Thus, through the Norwood timber sale, the USFS is explicitly allowing the cutting of snags.</p> <p>The DEIS also states that "[P]roposed fuel treatments along with other vegetative treatments and harvest have a slight potential to decrease existing snag numbers" and that "any loss of snags would be expected to be negligible." DEIS at 111. The agency's claim that all snags will be retained is erroneous.</p>	<p>Objective 211 pertains to management areas across the Forest. It does not pertain to project areas other than in standard 2301, which mentions meeting Objective 211 within a project area.</p> <p>The DEIS stated that using stand exam data and random snag transect data the estimated snag density is 0.58 to 2.36 snags per acre. The stand exam data was collected in 2002-2004 and transects were done in 2005. There have been localized disturbances (insects and fire) occurring within the project area which have created patches of snags, including 350 acres of the Sheldon fire. Many of these snag patches are not accounted for in the estimate of 0.58-2.36 snags per acre determined through stand exam and random transects. The actual snag density in the project area is higher than the estimate and may in fact exceed FP Objective 211 (within the project area). In addition, the Jasper fire, which burned over 82,000 acres directly south and east of the Norwood project area, contains many acres of snags. The Final EIS has been edited to more clearly display existing snag conditions (see page 102 in the EIS).</p> <p>Though some snags may be lost due to safety issues and vegetative treatments (unintentional); snags may be created due to prescribed fire and vegetative treatments accomplished. There is no claim in the EIS that all snags will be retained. Snags would only be cut if they are deemed a safety hazard during operations which is consistent with standard 2301. Cutting of snags for firewood is not allowed within the project area, which is consistent with standard 2304. It is expected that snag densities would increase in the project area under any alternative due to mountain pine beetle caused mortality (page 103, EIS). All alternatives would comply with amended Forest Plan snag direction, including standards 2301, 2304 and 2305.</p> <p>The 2005 Forest Monitoring Report states on page 22: "The addition of recent wildfires and insect tree mortality results in above 3 snags per acre well dispersed across the Forest".</p>
5ss	<p>Habitat conditions on the BHNF are insufficient to ensure the viability of snag-dependent wildlife. To begin with, the pygmy nuthatch has been found to depend on snags 19" or greater (Kingery and Ghalambor 2001). Thus, including snags 15" or even 16" in diameter in</p>	<p>Refer to comment responses 5hh and 5rr.</p> <p>The pygmy nuthatch is a SOLC species discussed on pages III-</p>

	<p>estimates of suitable habitat for these species is inappropriate as such snags are <u>not</u> suitable habitat. Furthermore, the pygmy nuthatch requires higher snag densities than 0.58 to 2.36 per acre (rather 3-4 per acre). <i>Id.</i></p>	<p>190-194 in the EIS. The Norwood project does not propose to remove any snags of any size, unless they are a safety hazard during operations.</p> <p>Pygmy nuthatch nesting habitat includes trees 15-27 inch in diameter. Refer to the Norwood Wildlife Report and the USDA Forest Service 2005 FEIS p. III-190. Phase II cites Ghalambor 2003 p. 13 (Black Hills pygmy nuthatch assessment) for this information.</p> <p>The pygmy nuthatch is likely to persist on the Forest due to Forest objectives, standards and guidelines being met and followed.</p>
5tt	<p>As it is, the USFS intensively manages the BHNF and the Norwood timber sale will exacerbate snag habitat deficits. One goal of the Norwood timber sale is to reduce tree mortality, making it even less likely that sufficient large diameter snags will be produced within a reasonable timeframe, both in the project area and across the BHNF. Furthermore, logging invariably targets large diameter trees. Thus, even though there may be sufficient large diameter trees to ensure future creation of enough large diameter snags, logging ultimately removes many of these trees and, in combination with the associated mortality rate reductions, artificially keeps both the numbers of large diameter live trees and large diameter snags depressed (the snags more so). 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 comment responses 5d-1, 5d-2, 5d-3, 5d-4, 5d-5, 5qq and 5rr.</p> <p>Snags are discussed in the Phase II EIS in Appendix D, pages 34-37 and the 10/2005 Errata. Large-diameter trees are discussed on pages III-10, 11 of the Phase II EIS.</p> <p>Proposed activities would not eliminate mountain pine beetle caused mortality in the project area. Snag creation will continue to occur. Reducing mountain pine beetle risk will improve the potential for trees to gain diameter growth and size prior to becoming snags.</p>
5uu	<p>Because the USFS assumes uniform snag persistence across the BHNF, the agency is relying on flawed assumptions with regards to the Norwood timber sale. Because the BHNF is so intensively managed, with most of the forest experiencing logging and thinning within the last 20 years, it can be expected that snag persistence has been significantly reduced. This would explain the extremely low snag densities. Furthermore, other factors that affect snag persistence include snag removal for safety reasons, illegal firewood cutting, and inadvertently knocking down snags during timber harvesting operations, making it likely that snag persistence is even lower. Data related to snag longevity in managed stands casts serious doubt as to whether snag retention measures are effective at providing adequate wildlife habitat. Instead of authorizing new road construction or road re-construction, for instance, the USFS should be decommissioning existing roads and ways to help protect snags on the BHNF.</p>	<p>The Norwood EIS does not claim uniform snag persistence.</p> <p>Refer to responses to comments 5d-3, 5d-5 and 5rr</p> <p>The Norwood action alternatives propose to close approximately 54 miles of road.</p>
5vv	<p>The proposed action (Alternative 2) states that it would reduce the potential for a large increase in brown, insect-killed or fire-killed trees evident in the landscape. DEIS at 190. We fail to understand why this would be a positive outcome when snags on the project area are</p>	<p>Refer to response to comment 5rr.</p>

	already below the LRMP objectives.	
5ww	Although the DEIS discloses that all streams are meeting their beneficial uses in the timber sale area, we wonder how much monitoring has actually been done. Although the South Dakota 303(d) Waterbody List for 2006 may not include any streams in the project area which violate water quality standards, we still would like to know to what extent water quality has been monitored within the Norwood timber sale area. We would also like to know more about stream health and the condition of wetlands on the project area. Very little useful information is included in the DEIS regarding streams and wetlands, making it difficult to provide substantive comments with regard to these resources. We do note, however, that two streams in the project area are rated as “at risk” (one on private land). Thompson Creek was observed to be trampled by cattle and a road is adjacent to the stream, yet there is no discussion of cumulative impacts the proposed project will have on Thompson Creek. As we stated earlier, very little information has been included in the DEIS on water and soils. The analysis is quite inadequate and the conclusions unsupported. The DEIS must be supplemented.	As stated in the Watershed Specialist Report, under the Field Surveys section, most (>95%) 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 Norwood Planning area and they are the agency that would responsible for doing the stream monitoring for the 303(d) list. The Forest Service is not a water monitoring agency. No wetlands would be affected by this activity as the location of the new road construction would be away from mapped wetlands and would be reviewed on the ground during the route review prior to implementation.
5xx	Regardless, the BHNF is obligated under the Clean Water Act to fully comply with water quality standards. Nowhere in the Clean Water Act does it allow federal agencies latitude to violate water quality standards. Thus, we request the BHNF revisit its analysis of impacts to water quality and ensure that all applicable state water quality standards are complied with as a result of the Norwood timber sale.	As stated in EIS, “BMPs are developed by the State of South Dakota and Wyoming to ensure compliance with federal and state water-quality standards.” The Norwood project will implement Forest Plan Management Requirements, that include WCPs and BMPs. Specific Design Criteria are listed in Appendix B. This will protect the water quality of the streams and creeks in the Norwood project area and the activities that are planned for will meet the requirements of the CWA. Implementation monitoring and subsequent effectiveness monitoring will ensure this. The Norwood EIS discusses BMP effectiveness on pages 59 and 60 (BMP effectiveness is discussed on pg III-457 of Phase II EIS)...Refer to response to comment 5o.
5yy	To this end, it is unclear the extent to which the USFS has conducted and/or will conduct baseline stream health surveys within the Norwood 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, “ <u>T-WALK (Ohlander 1996) is the minimum regional stream health screening tool; field methods used must be at least as rigorous.</u> ” In the case of the Norwood 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.	The Watershed Conservation Practice that is being cited is WCP #5. The design criteria for this practice include 1) “Add or remove rocks, wood, or other material in streams or lakes only if such action maintains or improves stream and lake health. Leave rocks and portions of wood that are embedded in beds or banks to prevent channel scour and maintain natural habitat complexity” and 2) “Do not relocate natural stream channels if avoidable. Return flow to natural channels where practicable. Where reconstruction of stream channels is necessary, construct channels and floodways with natural stream pattern and geometry, stable beds and banks and provide habitat complexity.” This WCP is specifically design to be applied

	<p>There is no indication that the proposed actions will maintain or improve stream patterns, geometry, and habitats toward robust stream health.² Before any decision to authorize the Norwood timber sale is made, stream health must be assessed in accordance with the WCPH and the BHNH Forest Plan</p> <p>¹ Robust stream health is defined at FSH 2509.25-05 as:</p> <p style="padding-left: 40px;">Comparable to the best situations unaltered by humans; habitat supports all regionally-expected species for the water body, including the most intolerant forms, with full array of age and sex classes; trophic structure is balanced; and numbers and biomass of organisms, or productivity, are at least 90% of long-term natural (reference) conditions.</p> <p>The failure to adequately assess stream health in accordance with the WCPH also indicates the USFS has failed to implement Best Management Practices. According to the State of Wyoming, the provisions of the WCPH are “recognized as Best Management Practices.” State of Wyoming Silviculture Best Management Practices, Wyoming Nonpoint Source Management Plan, 2004 at 8 (online at http://deq.state.wy.us/wqd/watershed/Downloads/NPS%20Program/Silviculture%202004.pdf).</p>	<p>when working in the streams or lakes. This project is not proposing to do anything in the streams or relocate the streams so this WCP does not apply to this project.</p> <p>Stream health was assessed and is presented in the EIS, page 34 and 35. The WCPH has recently been updated and T-WALK is no longer the minimum stream health screening tool.</p>
5zz	<p>The need to assess stream health in accordance with the WCPH and the BHNH Forest Plan is further required to ensure compliance with Section 404 of the Clean Water Act with regards to the proposed road construction/reconstruction and maintenance. According to Section 404, fill material from forest roads is only exempted from 404 permitting requirements if:</p> <p style="padding-left: 40px;">such roads are constructed and maintained, in accordance with best management practices, to assure that flow and circulation patterns and chemical and biological characteristics of the navigable waters are not impaired, that the reach of the navigable waters is not reduced, and that any adverse effect on the aquatic environment will be otherwise minimized[.]</p> <p>33 USC § 1344(f)(1)(E). This statute triggers USFS responsibility to ensure that several important requirements are met before undertaking road construction on National Forest System lands. To begin with, the statute clearly states that road construction and maintenance must be conducted in accordance with best management practices (“BMPs”). However, the statute is further clear that, if the USFS relies on BMPs, the agency must show that such measures assure that the flow, circulation, chemical, and biological characteristics of waters are not impaired. This is critical as recent BMP monitoring undertaken by the timber industry</p>	<p>Stream health assessments were completed for the Norwood Planning Area and presented in the draft EIS. Compliance with section 404 of the CWA is discussed in the Watershed Specialist Report, Final Report. Also identified in the Watershed Specialist Report, Final Report, there will be no new road/stream crossings, in fact there will be one less with the action alternatives and 0.25 miles less roads within the WIZ with the action alternatives. With no new road/stream crossings and no new roads in the WIZ, there will be no fill affecting flow and circulation patterns and chemical and biological characteristics on any streams so this project will be in compliance with section 404.</p> <p>Refer to response to comments 5b, 5o and 5xx on BMPs.</p>

	<p>in the BHNF has failed to disclose whether BMPs are adequately protecting the flow, circulation, chemical, and biological characteristics of waters.³ In fact, the BMP audit undertaken by the Wyoming Timber Industry Associations fails to reference or identify any efforts to assess the flow, circulation, chemical, or biological characteristics of any monitored streams in relation to assessing BMP effectiveness. This raises serious questions over whether BMPs will ensure adequate protection of watersheds and preclude 404 permitting requirements.</p> <p>However, regardless of the effectiveness of BMPs, Section 404 is clear that forest road construction and maintenance must not impair waters. To ensure compliance with this Section, the USFS must first assess stream health to determine whether or not streams within the Norwood timber sale are impaired. Again, this implicates the need to conduct stream health assessments using the T-WALK method or a more rigorous protocol. If the USFS does not undertake stream health assessments to determine whether or not streams are impaired within the timber sale area, then the agency has no basis to conclude Section 404 permitting is not required, regardless of whether BMPs are implemented.</p> <p>Section 404 further requires that, regardless of BMP implementation, the reach of waters must not be reduced and that any adverse effects to the aquatic environment will be minimized. Thus, the USFS must fully analyze and assess the impacts of the proposed road construction/reconstruction and maintenance to determine the impacts to stream reaches and the aquatic environment. If the USFS's analysis shows that stream reach will be reduced and/or that the aquatic environment will be adversely affected, then the USFS must obtain a Section 404 permit for the proposed road construction and maintenance.</p>	
5aaa	<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 protects aquatic habitats. Furthermore, we have seen no information or analysis showing that BMPs protect soils and waters in light of high erosion risk, steep slopes, and in light of cumulative impacts already experienced by watersheds. There is no indication that BMPs have been shown to be effective on unstable soils or when building roads on grades greater than 12%.</p>	<p>Refer to response to comments 5b, 5o and 5xx on BMPs.</p>
5bbb	<p>The DEIS contains no discussion whatever of soil disturbance and cumulative soil disturbance and whether the level of soil disturbance would remain below 15% of any land unit within the Norwood timber sale area. The DEIS fails to provide any information or analysis showing this will be the case. The DEIS is therefore fatally flawed. We request the USFS disclose how much soil disturbance has occurred within the timber sale area already, to provide a context for supplementation of the DEIS's cumulative impacts assessment.</p>	<p>Commenter is referring to Forest Plan standard 1103. Existing conditions of the soils are discussed in the EIS on pages 28-32. A more indepth discussion is available in the Watershed Specialist Report, Existing Conditions, pages 9 through 12, in the Norwood project file. Direct and indirect effects to soils are discussed on pages 47-52 in the EIS and Cumulative effects to soils are discussed on pages 55-57 of the EIS. Compliance with</p>

		Forest Plan Standard 1103 is discussed in the Final Watershed Specialist Report page 48. Past BMP monitoring shows that we are in compliance with this standard.
5ccc	The DEIS also fails to analyze and assess the cumulative impacts of domestic livestock grazing, off-road vehicle use, and other activities that may cumulatively impact soils and waters within the Norwood timber sale area. In numerous places in the DEIS livestock and ORV damage to resources is disclosed, but there is no assessment of cumulative impacts. We request the USFS take a hard look at how livestock grazing and off-road vehicle use have affected and will affect soils and waters within the timber sale area.	The Cumulative effects analysis is presented on pages 55-59 of the EIS. A more detailed discussion of the cumulative impact analysis is available in the Watershed Specialist Report, Final Report, Cumulative Effects of Alternatives section, pages 30 through 45. Timber, fire, grazing, ownership and roads, including off road, were looked at in detail. Refer to Appendix E of this EIS for a listing of past, present and future activities which were considered in the cumulative effects analysis.
5ddd	The BHNF may also need to apply for a stormwater discharge permit for the proposed road construction. A storm water discharge permit is required under the Clean Water Act for any construction project that may disturb more than one acre and that leads to the unnatural runoff of pollutions, such as sediment, into waters of the United States.	As discussed in the Watershed Specialist Report, Final Report, page 52, “Storm Water Associated with Construction Activities – Silviculture activities, including road construction for silviculture, are exempt from this permit. As mentioned above Forest Plans Standards will be implemented to prevent and minimize pollution.”
5eee	<p>The DEIS has conducted no analysis or assessment of project impacts on the soundscape of the project area and surrounding areas. Timber harvesting and other components of the proposed project involve the use of mechanical equipment which not only emits pollutants into the air, but also pollutes the soundscape of the project area and surrounding areas. Noise pollution is an issue not only for humans, but also for wildlife.</p> <p>According to Kurt Frstrup, Acoustician with the National Park Service’s Natural Sounds Program Center in Fort Collins, Colorado, hearing is essential for wildlife’s sense of warning. Sounds not only scare animals away from an area, but also limit their ability to hear the natural sounds upon which depend for survival. The period from about 1 hour before sunrise to 2 hours after sunrise is especially important for bird communication and other ecological processes. Similarly, the period from 1 hour before sunset to a couple of hours after sunset is critical for other species.</p> <p>Although a slight increase in decibel level might not seem significant, it is. For instance, a 6 dBA increase in ambient sound level due to noise will halve the distance at which many sounds can be heard, and cut the listening area to 25% of its original value. A 20 dBA increase in ambient sound level reduces hearing distance to 10% of its original value, and listening area to 1% of its original value. The ambient (background) noise level is different for every place. In backcountry areas of National Parks, for example, the ambient noise level is 15-25 dBA. The decibel level for a chainsaw is 97-110 dBA, while the level for a logging truck is 85-96 dBA, and a backhoe or bulldozer is 80 dBA. The impacts from these machines are cumulative.</p>	<p>The ‘soundscape’ was not specifically analyzed. This item was not brought forth in any scoping input or other internal or external discussions or correspondence.</p> <p>However, the wildlife specialist did review the references referred to in the respondent’s comment letter (Dyer, Archibald, McLelland & Shackleton and AMEC). The species highlighted in three of the references (two on grizzly bears, one on woodland caribou) do not occur in the Black Hills. The fourth reference (AMEC) did discuss marten, beaver, amphibians (but not Leopard frogs) and raptors. Table 6-2 on page 6-7 of the AMEC document states, “No behavioural [sic] response was detected” for northern goshawk when the source of noise was logging trucks. Effects of noise on marten, beaver and amphibians was either unavailable or inconclusive according to the AMEC report.</p>

	<p>Indirect evidence suggests that habitat loss is a potential impact of noise disturbance. For example, the distances of woodland caribou from such disturbances as roads, seismic lines and well sites were so large that 22 to 48% of their preferred habitats were avoided in their northern Alberta study area. Dyer et al. (2001). Archibald et al. (1987) estimated that 23% of a female grizzly bear’s annual home range was avoided for 14 hours a day because of disturbance from logging truck traffic. Similarly, McLellan and Shackleton (1988) found that road avoidance represented a loss of 8.7% of the available habitat in their entire study area.</p> <p>According to a study on the effects of noise on wildlife at an oil and gas drilling site in Alberta, Canada, “[T]he impacts of these effects might include habitat loss through avoidance, reduced reproductive success and mortality.” AMEC (2005).</p> <p>Clearly, noise from a project, and particularly a project with chainsaws, skidding equipment, logging trucks, etc., has impacts on wildlife. We request that the USFS conduct full NEPA analysis and assessment on these impacts before a final EIS is issued and a decision made. We reiterate the need of the USFS to be serious about focusing on wildlife habitat needs, rather than just paying lip service to it.</p>	
5fff	<p>The forestwide cumulative impacts of the proposed forest plan amendments are not fully analyzed and assessed. The analysis and assessment of cumulative impacts is quite poor. The USFS cannot reasonably assess whether the proposed amendments are significant or not unless they are analyzed in the context of forestwide impacts. Such an analysis must consider any and all other recent forest plan amendments that have been piecemealed and analyzed only at the project level.</p>	<p>The Norwood project does not propose any Forest Plan amendments.</p>
5ggg	<p>While the LRMP has a Monitoring Implementation Guide for monitoring projects and resources on the forest, we question the ability of the USFS to provide adequate funding to carry out monitoring. Appendix C of the DEIS states that with respect to monitoring for soil compaction, the “Forest currently plans to continue that level of monitoring, <i>as funds are available</i>. This project may not be specifically monitored as sites are selected across the forest and only a few projects are monitored.” These statements cause us great concern, especially if they apply to monitoring of the project as a whole. Monitoring is a critical component of the proposed project and unless the USFS can assure that all monitoring prescribed will occur, the project should not be authorized.</p>	<p>Monitoring will be dependent upon funding. Funding and Forest-level monitoring is outside the scope of this analysis.</p>
5hhh	<p>40 CFR §1508.20, 1997 requires the Forest Service to identify and disclose both the feasibility and the effectiveness of mitigation measures proposed. This includes, for instance, any proposed measures to mitigate impacts to goshawk, riparian areas, and erosion, and to other natural resource values. An assessment of the feasibility and effectiveness of mitigation measures should be included in the analysis, but it isn’t. In particular, mitigation should include measures in the areas of wildlife, timber, recreation, water quality, soils, and the aquatic environment. There is almost no discussion of mitigation in the DEIS and what few</p>	<p>The Norwood project was designed to avoid impacts to resources which would require mitigation. Refer to Appendix B in the EIS for an extensive listing of project design criteria. Also refer to the effects section of the EIS for information on project effects by resource area.</p>

	references there are to mitigation are lacking in details. Does the BBNF believe that a project of this scope and intensity will have no significant impacts? This is not made clear in the DEIS, but if this is the conclusion of the BBNF's NEPA analysis, we have seen no data or scientific support for this conclusion in the DEIS.	
5iii	Moreover, should the Forest Service choose to rely on Design Criteria that "meet or exceed" Best Management Practices (BMPs), the agency may not rely merely on prior experience and professional expertise without providing substantial data used to draw conclusions on the mitigation measures' effectiveness. Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1150 (9th Cir. 1998).	See response to comment 5o, 5zz, 5aaa and 5hhh.
5jjj	Decreasing the ponderosa pine density would be expected to reduce the risk of wildfire, which would help protect sensitive plant species/species of local concern habitat and structural range improvements. DEIS at 176	This is correct.
5kkk	The DEIS discloses that the "proposed treatments would reduce the potential for wildfire or insect infestation and provide a healthy forested ecosystem for quality recreational experience." DEIS at 183-184. We request that the USFS provide appropriate analysis and scientific documentation to support its claim that a forest without wildfire and insect infestation is a healthy ecosystem	The Norwood project does not propose to eliminate wildfire or insect infestations within the project area. That would not be possible nor would it be desired.
5lll	The Norwood timber sale was developed and the DEIS prepared under the 2005 NFMA planning rule and it is therefore invalid. The forest plan was developed under the 1982 planning rules and all projects must be in conformance with the plan and the 1982 rules. Second, the 2005 NFMA planning rule was declared invalid by the U.S. District Court for the Northern District of California on March 30, 2007.	The decision on this project will be consistent with the requirements of NFMA and the Forest Plan.
5mmm	Table 3.15 shows the existing fire hazard and insect ratings for spruce stands in the project area. We could find no corresponding table for ponderosa pines. Why is this?	Refer to tables 3.16, 3.19 and 3.36
5nnn	The DEIS Proposed Action states that "Fuel treatments are proposed to reduce fire risk, particularly around private land." DEIS at 10. In the discussion on Fire and Fuels, the DEIS discloses that "there are no major concerns with wildland urban interface at this time." DEIS at 83. What then is the purpose of fuel treatments to protect private land if there are no major concerns about WUI in the project area? The USFS needs to fully address this discrepancy in a supplemental DEIS.	There are fuels concerns, but no <i>major</i> concerns at this time. The majority of the private land is currently vacant (no structures).
5ooo	We question whether any analysis or assessment was made with regard to environmental justice in accordance with Executive Order 12898 and Department of Agriculture Regulation DR5600-2. The DEIS merely makes the bald assertion that "[N]o adverse effects from the proposed actions to minorities or lowincome populations are known." There is no other information or discussion in the entire DEIS. Upon what analysis and/or data is this assertion based? It is difficult to imagine that a project of this scope, intensity and duration will have no adverse effects to minorities or low income populations, especially when American Indians are the largest minority population within the Black Hills. We request that the USFS undertake a serious assessment of impacts to American Indians and other minority and low income populations. For example, what will be the economic impacts, the impacts to sacred and	Refer to the Heritage Resource discussion on pages 203-204 in the EIS. Refer to page 213 in the EIS on disclosures.

	religious sites, the impacts to aesthetic resources, the impacts to access of special places sought out for solitude, the cumulative impacts of past, proposed, and reasonably foreseeable future projects, the impacts to hunting and fishing, the impacts to collection of sacred plants, etc. Where is the discussion of these and other direct and indirect impacts?	
5ppp	There is also no mention in the DEIS of sacred American Indian sites. Have these sites been made identified and are there measures in place to protect such sites?	Refer to the Heritage Resource discussion on pages 203-204 in the EIS. Also, design criteria is included to avoid known sites as well as sites discovered during operations (see appendix B).
5qqq	We are disappointed with the inadequacy of the DEIS and its failure to address many of the issues which we raised in our scoping comments. We hope the USFS will take a hard look at the significant impacts to the environment and chose a different path with regard to the proposed Norwood timber sale and set a new—and very much needed—standard for ecosystem management on the BHNF that meets the needs of ALL forest resources. We support an alternative which does not undertake any logging, thinning, or other vegetation management. We request that the USFS undertake road decommissioning and closure throughout the Norwood timber sale area.	Biodiversity Conservation Alliance did not provide scoping comments on the Norwood project, nor did any of the other groups listed as “on behalf of” in the comment letter. Refer to response to comment 5t. The No action alternative would not implement any logging, thinning or other vegetation management. All of the action alternatives would implement road closures.
6a	We appreciate the opportunity to comment on the Norwood project area DEIS. In November 2003, we submitted a comment letter on the proposed North project, and in December 2004, we submitted a comment letter on the proposed Sherwood project. After notification that the North and Sherwood projects had been combined into one project area, Norwood, we sent in a comment letter in July 2006 in response to scoping information distributed on the proposed Norwood project.	Your scoping letter was received and considered, Thank you.
6b	The Norwood DEIS appears to be a thorough document that effectively discloses the direct, indirect, and cumulative environmental impacts that could occur as a result of the proposed action and other three alternatives. As 99% of the project area is within Management Area 5.1, Resource Production Emphasis, the action alternatives presented appear to adequately address the objectives attached to this management area designation.	Thank you for your support
6c	We continue to support the proposed implementation of multiple resource management actions within the Norwood project area and support the preferred alternative. Alternative 2 seems to meet the purpose and need for action through the proposed vegetative treatments, treating approximately 33% of the project area.	Thank you for your support
6d	We also strongly support the post-sale projects that call for the fencing and development of springs in the project area (i.e. the plan to pump spring water to water tanks via a hydraulic ram pump and pipeline). The proposed improvements, included in all the actions alternatives, should help better distribute livestock and reduce sedimentation. In addition to these spring improvements, we urge the use of “escape ramps” in stock water tanks in the project area. These ramps, used by local ranchers, can consist simply of a small 1”x6” board floating in the water tank. This board enables animals (including wildlife) that have fallen into a tank to crawl back out again.	Thank you for your support of the post-sale projects proposed. We agree that escape ramps should be included in all water tanks. This has been added to the post-sale project list.
6e	We again voice our concern over proposed modifications to the existing road system and	A Road Analysis Process (RAP) was completed for the entire

	would like to see travel management decisions with the project area be based in on-the-ground information. As is recognized in the DEIS, the project area benefits a large population of users, and we recognize that there are management challenges involved with that situation. However, impacts to multiple use activities should be carefully considered when road closure or re-classification are proposed. According to the DEIS, road density in the project area will be decreased from 4.0 miles per square mile to 3.2 miles per square mile, and the 70.5 miles of “undetermined roads would either be converted to system roads, trails, or removed from inventory.” Total road mileage in the project area is slated to decrease by 54 miles upon implementation of any of the action alternatives. Those statistics translate into major changes in access for various users of the project area.	Norwood project. This RAP was developed in an interdisciplinary approach which included all resource specialists on the IDT (refer to Chapter 6 of the EIS). Each road, whether system or non-system, was mapped and evaluated by each resource specialist for resource issues and need. The road related conclusions reached in the RAP were sent out in the scoping document for public review and comment. Very few comments were received on the road proposal and some very minor edits were made. No other specific input on roads or the proposed road closures was received on this project.
7a	We concur with the District’s assessment of purpose and need for the project. Mountain pine beetle mortality data has become available since the project’s scoping notice was issued through Forest Health Management’s aerial survey, and indicates that populations are increasing rapidly. Structural diversity within the project area is a central element of Forest Plan direction and the anticipated effects on disturbance processes as well as providing for long-term species viability. As is the case with a majority of the Black Hill National Forest, early successional stages of ponderosa pine are deficient within the project area while mature, dense conditions are overly abundant.	Thank you for your support of the purpose and need for action in the Norwood project.
7b	We commend the District for recognizing the opportunity to improve water yield and long-term stream health through active management (Objective 103; would benefit from the addition of 108). There is a lengthy discussion in the 1997 Forest Plan FEIS (beginning on III-45) that would enhance the effects analysis later in Chapter 3.	Objective 108 was listed in the Watershed Specialist Report, Existing Conditions but not brought forward into the EIS because it was not used in defining the purpose and need for the project.
7c	The context of the opportunity described for Objective 239 seems misstated. First, the forestwide objective is for 20,000 acres of spruce, not 2,000. Second, given that the forestwide acreage of spruce currently exceeds the objective, the “opportunity” would seem to be removing spruce from stands where it does not ecologically belong, not to “conserve” it throughout the project area. This opportunity seems to present itself most obviously in some of the action alternatives’ commercial thinning treatments with POL removal; removing understory spruce through these treatments will prevent it from overtaking pine stands, and thus, keep the forestwide acreage of spruce from further increasing.	Yes, the forestwide objective is 20,000 acres of spruce and the opportunity was misstated, this error has been changed in the final EIS.
7d	The discussion of Objective 10-01 leaves out the latter half of the direction, which aims to a 50% low-to-moderate fire hazard rating in areas of the forest outside the wildland urban interface. Given the relative lack of WUI concerns in the Norwood project, it would seem more appropriate to focus on this aspect of the direction rather than the WUI portion.	Thank you for pointing out this omission. The EIS has been edited to include the full text of Objective 10-01.
7e	After several field visits to the project area and a review of the DEIS effects analysis, we recommend the District modify the proposed action to better address the purpose in need. Specifically, we recommend the following: Implement the total acreage of commercial thinning from Alternative 3, but maintain the same acreage in residual BA70 as proposed in Alternative 2. Prescribe a variable	The alternatives analyzed allow the decision maker opportunity to select different alternative features in making a decision, if he or she determines that doing so would not result in a lack of consideration of project effects. An alternative which utilizes variable density thinning to achieve

	<p>density residual stand rather than a uniform spacing for the 1,676 commercial acres that are in addition to Alternative 2.</p> <p><i>Rationale:</i> As we have previously expressed to District staff, we believe there are more opportunities to enter currently deferred stands, particularly those within the Canyon Timber Sale Area, which appeared to have been shelterwood harvests that experienced sporadic regeneration, never received overstory removal and simply grew into two-aged stands. Removing enough of the mature age class from these stands, although something of a silvicultural oddity, would yield and immediate structural diversity benefit in the form of increased SS3 acres. These acres would also end up falling into a medium MPB risk category, and if POL thinning took place, would rate as moderate fire hazard. The District apparently feels commercial thinning in some of these areas is more appropriate, but we simply disagree.</p> <p>Alternative 3 is the only action alternative that begins to solve the project area’s insect risk, fire hazard, and structural diversity problems. However, it makes little sense to apply the same silvicultural prescription across 8,200 acres in the name of “diversity.” Breaking up the canopy continuity in a good share of these stands through a variable density prescription should assist in mitigating the wildlife and scenery effects associated with treating the additional acres without costing a lot in fire hazard reduction. Alternative 3 is the only action alternative that meets Objective 10-01 for 50% low-to-moderate fire hazard outside the WUI, and it performs the best in reducing acres at moderate and high risk of MPB infestation. Additionally, active management now is really the only way to move the project area toward structural diversity objective over time. The presence of healthy, reproducing trees on the landscape is the only way to create SS2 and 3, and in the absence of management the Forest Service is just rolling the dice on what wildfire and MPB will do over time.</p> <p>The small sawtimber stands in the southern portion of the project area present a difficult problem, but this should not deter the Forest Service from making its best effort to propose the needed management actions. The unfortunate reality of this situation is that, without treatment, many of these stands will grow into high MPB susceptibility before the next entry and the District will just be starting over with them anyway. There may be opportunities to allay the fuels treatment, TSI, and POL costs associated with this alternative through mechanisms like stewardship contracting.</p>	<p>the purpose and need for action was not brought forth during project scoping and therefore was not considered. The project Decision maker may determine that such an alternative should be considered before a decision is made. This would require additional analysis on this project.</p> <p>The stands which were old shelterwood seedcuts in the previous sale(s) in the Canyon area were field reviewed by the project silviculturist. Three of these stands are being harvested in the Canyon timber sale and four of these stands are proposed for treatment in the Norwood project. The remaining sites were not proposed for treatment in the Norwood project due to the following reasons: they are at the desired density; did not fully regenerate to desired numbers; or they are now 3B stands. The Norwood project file contains a site by site listing of reasons why sites were deferred from treatment. The Silviculture Report contains a summary of acres deferred and why.</p> <p>Alternative 3 focuses on 2 of the 3 significant issues; aspen restoration and mountain pine beetle risk. Alternative 4 was developed to focus on the significant issue of pine structural diversity. Each of the alternatives considered in detail results in varying degrees of diversity on the landscape.</p> <p>All of the action alternatives would implement active management and move the project area toward meeting the early successional stage objectives.</p>
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		Treatments are proposed in the small sawtimber stands in the southern portion of the project area for the reasons listed. Stewardship contracting may be an option for implementation of this project.
7f	The soils effects analysis does a good job to address Forest Plan Standards and Guidelines regarding detrimental compaction and soil erosion. However, it is important to explicitly say that “an on-site review was completed” per Guideline 1108. Most of the discussion later in Appendix B’s design criteria covers this by inference, and a reference to Appendix B may be appropriate, but the current legal interpretation dictates that the ‘on-site review’ warrants explicit mention.	Page 28 of the EIS states that on-site reviews were completed on five different soil map units representing 73% of the planning area.
7g	We recommend the use of cut-to-length harvest equipment as a potential means to mitigate compaction and erosion concerns where relevant. The use of this equipment may be considered, per Forest Plan direction, as an alternative to dry/frozen operating restriction with “careful supervision.” In the case of the Norwood project, this may be necessary as the area is largely inaccessible during ‘frozen’ conditions due to snow cover and snowmobiles trail conflicts. Given the acreages that are proposed for this restriction, the operating season may not be long enough to complete timber harvest work within the specified contract length.	On soils subject to compaction the following design criteria is being applied (see Appendix B of the EIS), “On soils subject to compaction when wet, machinery operations must be restricted to dry or frozen soil conditions. Low impact equipment, such as cut-to-length systems, or equipment operating on slash may be used with close monitoring.” This design criteria does allow timber sale administrators options such as cut-to-length systems, or other equipment that minimizes soil compaction on these soils rather strictly limiting operation to dry or frozen conditions. However, on soils with erosion or mass wasting concerns, operations need to be restricted to dry or frozen conditions because the risks are too high and disturbance needs to be kept to a minimum.
7h	The acreage of site preparation that accompanies some of the proposed treatments is somewhat unique among most Black Hills forest management projects. Mention of the effects of site preparation in the soils effects analysis may be warranted.	In Appendix B, the design criteria, “Manage land treatments to limit the sum of severely burned and detrimentally compacted, eroded, and displaced land to no more than 15% of any land unit” will apply to site preparation so the soils will be protected and Forest Plan Standards will be met. (see appendix B). The site preparation has been considered in the effects analysis.
7i	The timeline for cumulative effects analysis in the Silviculture effects analysis (limited to 1980-2017, pg 81) seems somewhat arbitrary. No justification is given as to why the analysis is limited to this timeframe, and the table in Appendix E includes timber harvest prior to 1980. Either some discussion on why this timeframe was selected, or the incorporation of the Appendix E data by reference seems necessary to avoid any documentation problems related to cumulative effects.	The silviculture analysis was bounded in time from 1980 – 2017 for the reasons stated on page 82. Appendix E was provided to all specialists to consider the most appropriate temporal cumulative effects boundary for their resource. The silviculturist considered these activities in making the conclusion that the most appropriate cumulative effects

		boundary for the Norwood silviculture analysis would be as stated.
7j	The discussion of effects on structural stage objectives from the no-action alternative (pg. 69) is helpful and accurate, but the discussion for the action alternatives (pg. 73) would benefit from some clarification. All action alternatives, move toward correcting MA 5.1's deficiency in early-successional stages. The amount of SS2 increases (although the MA-wide percentage does not show a change), which will allow recruitment into a SS3 in the future and continue moving the forest toward MA Objectives.	This clarification has been made in the EIS, see pages 74,78 and 81.
7k	<p>The wildlife effects analysis for MIS on page 104 would benefit from being a little clearer on "best available science." Two recent 10th Circuit Court of Appeals decisions have highlighted the need for the Forest Service to explicitly use the phrase "best available science" in citing the information used to make determinations about project effects on species. There is a need to clarify the initial MIS paragraph on page 103, which seems to confuse the issue of assessing population viability between the project and Forest Plan levels. Population viability is assessed at the Forest Plan level, not at the project level. Project decisions describe the site-specific effects on MIS and Sensitive Species in the context of the "best available science" for a given species.</p> <p>For example, the analysis for beaver states (pg. 105), "The analysis complete for the Phase II Forest Plan amendment concluded that there will be adequate habitat for maintaining viable populations of beaver.," which should be followed by a sentence about what the data from the forestwide monitoring report says about current beaver populations (up/down/stable). The analysis should then say something like, "The Phase II EIS, the conservation assessment for beaver, and forestwide monitoring information constitute the best available scientific information for this species. Based on this information...[state effects of project]."</p>	<p>An addendum to the wildlife specialist report has been prepared which addresses 'best available science'. This addendum references the literature cited in the Wildlife Specialist Report as well as other references considered.</p> <p>The initial MIS paragraph has been revised to better clarify the distinction between Project level and Forest level analysis.</p> <p>The 2004 Forest Monitoring report was cited under the Existing Condition section in the specialist report. This is where population numbers were discussed. The 2005 monitoring report was also cited in this section for population and habitat trends. The 2005 Black Hills FEIS for the Phase II Amendment was cited in the specialist report in the Conclusion section for each species of MIS.</p> <p>The R2 beaver conservation assessment was published after completion of the specialist report. This conservation assessment, along with the one for ruffed grouse and leopard frog, have since been reviewed. The analysis provided in the Norwood EIS is consistent with these conservation assessments and there is no additional information which would change the conclusions reached in the Wildlife Specialist Report or EIS.</p> <p>Refer to response to comment 5g</p>
7l	The cumulative effects analysis (pg. 121) for golden crowned kinglet, black-backed woodpecker, and song sparrow, and (pg. 150) sharp-shinned hawk, Cooper's hawk and broad-winged hawk, northern saw-whet owl, pygmy nuthatch, bat SOLC, and northern flying squirrels do not clearly address whether effects are expected under the action alternatives. The analysis does not seem to consider the action alternative; we assume this was omitted because of the absence of effects. However, if the alternatives have no effect, then the analysis needs	The cumulative effects analysis discussion for wildlife species has been edited to further provide clarification.

	<p>to state as much. Failing to simply mention the alternatives could lead a reviewer to conclude that the cumulative effects were not considered.</p>	
<p>8</p>	<p>Thank you for the opportunity to comment on the Draft Environmental Impact Statement (EIS) for Norwood. After reading through the EIS, we would like to extend our support of the planned projects.</p> <p>The Forest Service has chosen Alternative 2 as the preferred Alternative for this area. While we agree that Alternative 2 would accomplish many of the objectives within the forest, Alternative 3 may be a better option given the current stand and drought conditions. Bark beetles are at epidemic levels throughout the region, and though much of the project area has not been hard hit, it is important to manage the forest as aggressively as possible before the insects move into the area. The heavier concentration of commercial thinning throughout the area, as presented in Alternative 3, may provide greater protection against beetle attack.</p> <p>Wyoming State Forestry Division would also like to extend our support to the Forest Service for completing an analysis and proposing projects on an area as large as Norwood. The economics of completing NEPA documentation of projects of this scale make much more sense than many of the small scale projects being completed throughout the region, and we hope to see more projects similar in size in the future. The State of Wyoming, as well as most of the region, is also experiencing a sharp decline in the number of lumber mills and forestry operators. Most of the forested ownership throughout Wyoming falls within federal lands, and it is important that the federal land managers realize the importance of providing a sustainable flow of products to those resources. The Norwood project is a step in the right direction, and we hope to see projects of similar scale in the future.</p>	<p>This letter was e-mailed to the comments database on May 18, 2007. The comment period ended on May 14, 2007 and therefore, this comment letter was received after the close of the comment period.</p>