Objection against the Red Rocks Vegetation Project on the Butte-Jefferson Ranger District of the Beaverhead-Deerlodge National Forest

1. Objectors Names and Addresses:

Native Ecosystems Council, Lead Objector; PO Box 125, Willow Creek, Montana. Phone 406-579-3286 for Director Sara Johnson

Alliance for the Wild Rockies, PO Box 505, Helena, MT 59624; phone for Director Mike Garrity 406-579-5936

Signed for Objectors this 23rd day of April, 2019

Sara Johnson, NEC Director

2. Name of the Project

Red Rocks Vegetation Project

3. Location of the Project

Butte-Jefferson Ranger District of the Beaverhead-Deerlodge National Forest

4. Responsible Officials

Dave Sabo, Butte-Jefferson Ranger District Ranger
Forest Supervisor Cheri Ford, Beaverhead-Deerlodge National Forest

5. Previous involvement of objectors in the proposed project

NEC and AWR provided joint scoping comments on the proposed project on 3/9/18, and requested additional information on the project on 3/12/18. Additionally, NEC submitted 2 Freedom of Information Act requests on the project, on 3/12/18 and 3/11/19. These comments and information requests dealt with a variety of topics that are covered in the objection, including the general management of big game, old growth forests, snag habitat, and proposed and threatened species, including the wolverine, lynx and grizzly bear. As indicated by the information requests, our issues in the objection also carry forward failure of the agency to complete adequate wildlife surveys as well as any surveys for old growth in the project area. We hoped to obtain an understanding of the level of past timber harvest from information requests. The failure of the agency to complete adequate surveys, based on responses to our information requests, is also carried forward into this objection. With the additional information provided in the draft EA and draft Decision, we are also bringing forward the issues of failures to provide adequate NEPA documentation as well as adherence to the Revised Forest Plan, issues that were not directly outlined in our scoping comments.

6. Remedies

Due to the large number of legal violations that will be triggered by the project (National Environmental Policy Act [NEPA], National Forest Management Act [NFMA], the Administrative Procedures Act [APA], and the Endangered Species Act [ESA], including, as examples of these violations, a failure to provide adequate science and documentation in the NEPA analyses; a failure to complete adequate surveys for nesting goshawks and great gray owls, old growth forests, and the management indicator species the wolverine; the use of invalid habitat measures to evaluate the level of past and planned impacts on elk so that actual environmental impacts of the project are hidden; a failure to evaluate how the project will impact elk vulnerability and use of summer habitat; a failure to complete Forest Plan Amendments required for a number of forest plan violations including snag and old growth habitat management; a failure to complete a biological assessment for the proposed wolverine; a failure to

complete an environmental impact statement (EIS) due to proposed significant impacts on the threatened grizzly bear and proposed wolverine; and overall, a failure to complete an Environmental Impact Statement (EIS) for the cumulative impacts that will be exacerbated by this project, NEC and AWR request that the proposed project be withdrawn.

Attachments: This objection includes 8 attached appendices, Appendix A through Appendix H.

Appendix A provides the general information (project maps and acres treated, plus new roads) on 5 logging projects that are ongoing or planned on the Continental Divide between Butte and Helena.

Appendix B provides a summary of the acres of past logging in the Red Rocks Project Area.

Appendix C provides copies of the FOIA requests NEC submitted on the project, and copies of the 2 large-scale maps that show all the road locations in the project area.

Appendix D provides literature and reports cited in the Objection in regards to management of big game, primarily elk.

Appendix E provides literature and/or reports cited in the Objection in regards to wolverine and lynx.

Appendix F provides literature and/or reports cited in the Objection in regards to snags.

Appendix G provides literature and/or reports cited in the Objection in regards to management of old growth habitat.

Appendix H provides literature and/or reports cited in the Objection in regards to management of grizzly bears.

7. Description of aspects of the project addressed by the objection, including specific issues related to the project and, if applicable, how the objectors believe the environmental analysis or draft decision specifically violates law, regulation, or policy:

A. The agency has violated the NEPA, NFMA and APA by failing to disclose that the proposed vegetation treatments will have significant adverse impacts on elk and many other wildlife species. There are a huge number of impacts, when combined with past and planned actions, impacts that require completion of an environmental impact statement (EIS).

1. Big game winter range will be severely degraded.

Figure 31 of the EA identifies the location of general and critical elk winter range in the project area. The Wildlife Report at 35, and EA at 72 state this winter range includes 26,442 acres. This is approximately 33% of the project area, and 36% of the Forest Service lands in the project area. Of this critical winter range, 13,243 acres are grassland-shrubs habitat (EA 72). Thus approximately half of this critical winter range is forested habitat. This would be 13,257 acres.

The agency notes that there will be 26 logging units on critical elk winter range (e.g., Biological Assessment (BA) at 25, EA at 78). There is no map that shows the overlap of the proposed clearcuts and critical winter range. The acres involved are never disclosed. This information can be derived, however, by looking at Appendix D of the Wildlife Report identifies, that identifies the location of proposed units, including on winter range. These units total 762 acres of essentially clearcuts. Five of these clearcuts are over 40 acres in size. The clearcutting of these 762 acres of forested winter range would be approximately 6% of forested habitat. The amount of acres of forested habitat that have been previously removed, and no longer provide

either hiding cover up to 20-50 years after logging, and thermal cover (up to 50 plus years after logging) was never provided. Thus the impact of the project on the forested portion of this critical elk winter range was never identified. As per Appendix B of this objection, there has been ongoing extensive timber harvest in this project area since the 1940s, so thermal cover conditions would not have developed in many of these harvest units, since thermal cover is defined as forested stands at least 40 feet tall with a canopy cover of 70% (Black et al. 1976). In addition, 15,934 acres of past logging units have been precommercially thinned, which would postpone the development of a 70% canopy cover required for thermal cover.

The EA and Wildlife Report do not provide any objectives for this winter range. There is no information on the current habitat conditions of the 26,442 acres of critical winter range, including hiding and thermal cover. Therefore the impact of the proposed removal of 762 acres of hiding and thermal cover is unknown, as it was never disclosed.

The agency claims there are no anticipated effects to wintering elk from the proposed project (EA 41). This is clearly not true, given that a key forage for elk will be burned, sagebrush, and key forage, thermal and hiding cover will be removed in logging units.

There will be 2638 acres of slashing and burning of natural openings on the critical winter range (EA 296). The EA claims this sagebrush is decadent and needs to be burned (EA 148), even though burning kills sagebrush. The EA at 152 also claims that burning (and killing sagebrush) will increase landscape forage and improve rangeland health. The sagebrush habitats to be destroyed are displayed in Figures 31-32 of the EA, including unit 441 which is 132 acres. These figures clearly show that the EA's claim at 258 that sagebrush has to be burned (and killed) to prevent these areas from turning into forests is false, as there are few trees present in this unit. The problem of trees on big game winter range was never identified as per any current science. The importance of removing sagebrush from critical winter range was also not addressed. Sagebrush is known to be an important winter forage for both elk and deer, including that sagebrush has a 12.4% level of protein in the winter, as opposed to grasses that have only about 3.7% protein (Wambolt 1998, Petersen 1995). Removing a forage resource that has a protein value of over 3 times that of grasses is not a benefit to big game on their winter range.

The EA suggests that thermal cover is no longer considered an important factor on big game winter ranges. The claims that thermal cover is not important on elk winter range stemmed from a 1998 Wildlife Monograph article by Cook and others. In 2005 Mike Thompson and others provided a review of this research and how the references to this study have been extended beyond the limitations of this research, with a misapplication of its conclusions; their study was essentially a "laboratory study." This review includes the following excerpts:

-elk used in that study were tame elk confined in pens, and fed regularly.

-when deep and/or crusted snow develops on winter range, elk abandon rangelands entirely under these conditions.

-wild elk employ both energy acquisition and energy conservation strategies to survive winter; the potential benefits of cover should increase as foraging costs increase.

-53-60% of the elk population abandoned the normal winter range of rangeland and low-shrub habitat in 1996-97 due to severe snow; they shifted to forested habitat within the normal winter home range.

-elk moved to forest under severe stress; elk need forests because these provide food, with a diet shift to conifers and shrubs from grass; Douglas-fir was the highest ranking species in the diet in 1997, followed by upland willow, pine, and conifer bark; the forest is forage.

-forage is no good if elk can't paw through the snow to obtain it; ameliorating foraging cost is a major role that forest habitats play.

-bulls older than 2 years old live in the forest every winter, over 80% of the bulls in most winter; if we manage forests on elk winter range for not other reason, we manage them for bulls.

-cows tend to increase their use of forests in most winters as snow depth increases and layers of crust form in the snow column; the highest use of forest types occurred in February when conditions are usually at their worst; we see the entire population move into forested habitat within the normal winter home range under such conditions.

-they assumed that elk obtain thermoregulatory benefits from individual trees and patches of on various aspects and terrain in forested foresting types.

This lecture by Thompson and others is consistent with the results of a 15 year elk-logging study done in Montana (Lyon et al. 1985). Their conclusions include the following:

-page 14-timbered areas adjacent to primary winter foraging areas should be managed to maintain the integrity of cover for elk; winter range conditions vary greatly across Montana; to the east, elk forage on grasslands and seek cove r in adjacent timber stands; snow depths are usually low to moderate, and elk wintering in these areas may venture far from timber cover when undisturbed; when snow does get deep, elk will seek cover; logging adjacent to grassland winter ranges will normally be detrimental to elk.

-page 15-because of the relative importance of productive elk winter range and the narrow margin for error, any contemplated modification of timber stands should be planned on a site-by-site basis, with primary emphasis on maintaining adequate cover adjacent to productive forage areas....conservation of stored energy as well as energy intake is important to wintering elk.

In 1993, Region 1 of the Forest Service published recommendations for management of elk habitat in the planning process (Christensen et al. 1993). This report includes recommendations for the management of winter range:

-management of winter range remains the single most site-specific consideration for elk habitat; each winter range is unique in some way.....in recent years, our understanding of animal physiology on winter ranges has modified; forage is important but in severe weather many animals substitute an energy-conservation strategy for forage intake; thus management of winter range to improve thermal cover and prevent harassment may be as important an anything done to change forage quantity or quality; managers needs to consider factors including thermal cover; some winter ranges lack thermal cover which does not mean thermal cover serves no purposed where it is available; where behavior patterns have been recorded, elk select resting and feeding sites based on control of energy transfer rather than forage available; we recommend selective retention of larger trees where possible.

2. The agency claims by omission of any analysis that there will be no significant impacts on elk summer use based on hiding and thermal cover conditions.

There is no analysis in the EA as to how the project will impact elk use on summer range due to reductions in hiding and thermal cover. Thermal cover

on summer ranges has been identified as an important habitat that allows elk to moderate ambient air conditions. Hiding cover on summer ranges has been identified as a huge factor in the displacement affect of roads. And hiding cover has been identified as a key factor in allowing elk use of openings, including clearcuts. This science has been established since the 15 year elk logging study was completed in 1985 (Lyon et al. 1985). Some of the excerpts from this report include the following:

-page 5 – maintain frequent dense cover areas adjacent to the road.

-page 9 – where cover is poor (one-third or less of total area) and road densities are high (more than one-half mile of road per square miles, restrictions will reduce harassment of elk and reduce early elk harvest; where cover is good (at least two-thirds of total area) and open road densities are low (less than one-half mikle of road per square mile), restrictions will probably have less influence on elk distribution and elk harvest.

-page 9 – openings should be small, even though opentins up to 100 acres may be acceptable where the adjacent forest edge supplies adequate security; thinning adjacent to clearcuts is not recommended.

-page 10 – available data do not demonstrate that clearcuts in any configuration are clearly beneficial to elk; they may not be detrimental if openings can be developed without reducing overall habitat security for elk.

-page 44 – topography and tree cover are utilized year around in an elk's search for moderate conditions for moderation of body temperature.

-page 45 –good nutritional quality, high forage production, high security, adequate thermal cover, and a diverse species composition all contributed to the importance of elk summer habitat; reductioin in security and thermal cover resulting from clearcutting may reduce the attractiveness of these sites to elk; security in the form of timber seemed to play an important role in selection of foraging sites by elk during the spring through midsummer months, but appeared to play an even more important role during the late summer and fall.

-page 46 – delayed phenological development of forbs and grasses during late summer and fall made timbered sites attractive; the highly nutritious but lower quantity of herbaceous forage on forested types ....would enable elk to sustain a high quality diet into the fall; moreover, forested types provide security cover during the rut and fall hunting season.

-page 46 – productive forage areas and moist sites can be selectively protected to enhance elk abitat, but such areas may be only marginally

available to elk where poor cover interspersion, high road densities, or untreated slash reduce accessibility.

3. There was no public notice in regards to openings that would be over 40 acres in size; there was no analysis of the environmental impacts of the huge number of openings that will be over 40 acres in size on wildlife.

There is no discussion or analysis in the project EA in regards to the creation of many openings over 40 acres in size. The Forest Service claims that almost all of the logging units will not be openings. As such, they failed to provide the public any 60 day notice that openings over 40 acres would be created. The basis for the claim that almost all logging units, which are predominately lodgepole pine which have been experienced severe mortality from the mountain pine beetle, will not actually be clearcuts is that there will be a "stocked stand" after logging. This stocked stand would consist of seedlings and saplings, not larger trees. There was no analysis provided to demonstrate that these logging units, after removal of most lodgepole pine mature trees, and burning of remaining understory trees in many cases, would still provide hiding cover for big game, wolverine, pine marten, snowshoe hares, and grizzly bears, for example. The salvage will clearly create a huge change in the hiding cover values of these stands, and the failure of the agency to identify this significant change in habitat quality, from hiding cover to non-cover, is a violation of the NEPA. This claim allowed the agency to supposedly avoid giving public notice of openings over 40 acres to be created, ,as well as to evaluate the impact of many new large openings to be created. These actions are a violation of the NEPA by failing to disclose project plans and impacts to the public.

We were unable to locate any information of opening sizes to be created except for unit sizes in Appendix A of the draft DN. There are 26 units that will be over 40 acres in size. The total acreage of these units is 2328 acres. This is 65% of the total acreage proposed for harvest, or 3598 acres. The average opening to be created by these units is approximately 90 acres. The individual unit size ranges up to 199 acres. However, the total combined opening size due to adjacency of new and existing units, we believe, extends up to over 400 acres for new units. We could also not find any analysis of how these individual and combined new unit opening sizes would be cumulatively affected by many existing openings already created by roadside hazard treatments. The draft DN at page 38 identifies that 22 of the

currently-proposed units will lie adjacent to openings created by recent roadside hazard logging. This is clear from the photos of past roadside hazard removal treatments in the EA, which show a complete lack of hiding cover (e.g., Figures 38, 47, 48 and 52). It is never disclosed how many clearcuts exist in the project area from recent roadside hazard treatments, which would mean they still lack hiding cover. However, this appears to be a considerable amount of the landscape. Appendix A of the Vegetation Report shows that since 2010, there has been approximately 5,000 acres of logging in the Red Rocks Project Area. There are no actual records of this past logging on the Forest Service web page for roadside salvage in the project area, so we are unable to specifically show these 5,000 acres of more recent harvest are roadsize hazard treatments. It is unclear specifically what projects this 5,000 acres of harvest involved due to a lack of disclosure in the NEPA documents for this project.

Given that 65% of the proposed logging will create openings that lack any hiding cover or habitat for wildlife, the rationale for exceeding the 40-acre size limit of openings identified in the RFP was never disclosed to the public. In addition, the severe adverse impacts to wildlife from these large openings was also never identified. Thus there is a significant adverse impact from the proposed project that was never either disclosed or evaluated to the public. This is because large openings result in severe fragmentation of forest habitat, and can degrade or actually eliminate the ecological function of forest areas for wildlife due to habitat reductions. As just a few examples, the creation of large openings will remove elk security habitat for 20 or more years, until hiding cover regrows. Security as per the current best science (Hillis et al. 1991) requires a minimum of 250 acres of contiguous forest cover. The retention and provision of these larger blocks of forest cover is a direct conflict with large openings. There are similar conflicts with large openings for four Montana Species of Concern, the goshawk, great gray owl, pileated woodpecker and black-backed woodpecker. The black-backed woodpecker is also a sensitive species on the BDNF. Nesting areas for goshawk are recommended to be 180 acres of mature and old forest, without any clearcuts (Reynolds et al. 1992). Great gray owls are to have a recommended 162 acres of mature and older forest surrounding their nesting area (Franklin 1988). Recommendations for the pileated woodpecker include 900 acres patches of habitat without any clearcutting (Bull and Holthausen 1993). The Forest Service noted in the Red Rocks EA at 96 that the black-backed woodpecker requires a home range of 242 acres of forest. Large openings may significantly impact pine

marten by removing much of their winter rang within a territory, which for a female marten, averages only 1160 acres (Warren 1990). Older forest habitats with heavy downfall are essential winter habitat for the pine marten (Sherburne and Bissonette 1994). Fager (2003) noted that in Montana, too many openings in pine marten habitat will reduce the carrying capacity for this species. Large openings and thinned forest will also make it difficult for pine marten to use remaining suitable habitat, including winter habitat, in their home range due to travel barriers created by openings and open forest (Moriarty et al. 2016). Large openings will also reduce the ability of the goshawk to successfully raise young since clearcuts remove their key prey species on the BDNF, the red squirrel and snowshoe hare (Clough 2000). Snowshoe hare habitat is degraded with both openings and forest thinning (Holbrook et al. 2017, 2018), and suitable winter habitat for these hares will require 20 plus years to reestablish after clearcutting. Goshawks are a forest species, and given that most of their prey comes from forest habitats (snowshoe hares and red squirrels), management recommendations for this species note that any openings over 4 acres do not count as goshawk foraging habitat (Reynolds et al. 1992).

In addition to the potential for the loss of large security blocks of forest to elk, large openings will also have an impact on forage availability to elk. In a collaborative report by the MFWP and the Forest Service, it was noted that forest cover will lengthen the season of succulence and palatability where adequate understory forage exists and the overstory provides shade (page 19); forage within forested areas can have a longer green and succulent season, when more open areas cure out in the later summer sun (page 22). This report at 19 also cites other research in the Blue Mountains where late summer forage quality for elk was highest where it was within a forest cover type.

Given the expansive adverse impacts that will result to many Montana Species of Concern due to the large openings that will fragment their habitat without any conservation measures in place for mitigation, it is inescapable that the Red Rocks project will have significant adverse impacts on these wildlife species, which means that an environmental impacts statement is required, along with the required public 60 day notice for openings to be created that will be over 40 acres in size..

4. There is no analysis of direct impacts of the project on elk or other wildlife, which means there is no basis to measure the level of

environmental impacts on wildlife during and after project implementation.

The analysis area for this project ranges from 218,752 to 240,566 acres (Wildlife Report 16, 28). There is no analysis completed for any wildlife for just the project area, which comprises roughly 80,000 acres including private lands. The Forest Plan Objective for open motorized route density AFTER PROJECT COMPLETION requires measurement at the landscape level. This means for the Boulder River Landscape, this measure would be on 218,752 acres. The Forest Plan objective for open motorized route density in the fall is required at the Elk Herd Unit (EHU). For HU 318, the size is 143,104 acres (Wildlife Report at 23, Table 16).

For the project area of roughly 80,000 acres, there is no analysis of habitat effectiveness, or the active motorized routes during the summer season, or on hiding/thermal cover on elk summer and winter range, or elk security during the fall. These measures identify the amount of habitat that is available on a given landscape for elk, including in both the summer, fall and winter (Christensen et al. 1993; Lyon et al. 1985). These measures are actually recommended to occur at a scale smaller than the Red Rocks project area. In 1982, Lyon et al. 1982 identified the average home range size of elk in Montana was around 25,000 acres, with seasonal use areas being considerably smaller. This is the size of analysis area for elk (25,000-40,000 acres) that was most recently recommended by a collaborative group of Forest Service and Montana Fish, Wildlife and Parks biologists (Canfield et al. 2013 draft, page 7). Canfield et al. (2013 final at page 7) noted that hunting districts are too large to appropriate quantify Forest Service project level effects. This would include hunting district 318, which is 143,104 acres. They noted that watersheds are logical units for many ecological processes and are consistent with Lyon and Christensen (1992) from the perspective of representing a geographic boundary; watershed boundaries also have some biological meaning relative to elk. Table 34 in the Red Rocks EA identifies 6 watersheds in the project area. The size of these watersheds range from 11,675 to 23,688 acres. A valid analysis of project impacts on elk would include an assessment of habitat effectiveness, summer hiding and thermal cover, winter range thermal and hiding cover, and elk security as applied by Hillis et al. (1991).

The measure of summer habitat effectiveness (HE) can be used to provide a scientific measure of displacement impacts to elk (Christensen et al. 1993;

Lyon et al. 1985). When HE declines below 50%, there are significant displacement effects to elk. Id. Unless HE is actually measured, the level of elk displacement cannot be identified. Without any measures of displacement, conclusions regarding the threshold of significant impacts cannot be identified for a Decision Notice and Finding of No Significant Impacts (FONSI). Since there are no HE measures for the Red Rocks project, the FONSI is invalid. It is evident that even current levels of active motorized routes in the Red Rocks Project Area are excessive. In comments on herd unit 318 by MFWP employee Jenny Sitka, the following was noted:

-2017 was the second consecutive year that the count, 381, was below the population objective: 500.

-the ratio of 27 calves:100 cows was low relative to historical data for this district, and was lower than other districts on the east slope of the continental divide.

-a reduction in routes open for motorized use during the hunting season in this district may result in increased bull survival; such a reduction is warranted given bull:cow ratios feel below the minimum objective of at least 10:100 in 13 our of 23 surveys since 19909; the Beaverhead-Deerlodge National Forest allows for 1.8 miles per square mile of open motorized routes during the fall rifle season in this area and allows 1.9 miles/mi2 the rest of the year, which drastically limits the availability of functional big game securit5y habitat within the district.

In addition, the FONSI is invalid for the Red Rocks Project because the current and proposed impacts on elk security were never measured. The Beaverhead-Deerlodge National Forest Revised Forest Plan (RFP) noted that the Hillis et al. (1991) method, or the "Hillis Paradigm" was the currently accepted measure of elk security when the RFP was developed (see RFP glossary at 288). This definition of the Hillis Paradigm was used in Alternative 1 for the RFP, but not used for the remaining alternative (RFP 497-500). For all alternatives except #1, the agency claims that this Paradigm was being "updated" with new science to be defined as 10 acres of any habitat that is over one-third mile from an active motorized route (RFP glossary 302). The reference for this updated definition was the Grizzly Bear Conservation Strategy. Elk security can be a clearcut, without any hiding cover.

In the Red Rocks Wildlife Report at 22, they attempt to justify the failure of the RFP to use the Hillis Paradigm by stating that 3 newer studies indicate

that hiding and thermal cover are not important measures of elk habitat quality. However, 2 of 3 of these references post-date the RFP, so could not have been used to justify the failure to use the Hillis Paradigm as the measure of elk security.

This definition of 10 acres of an area as security for elk is not based on any known science for elk, and does not provide a valid measure of project impacts on elk security. The Hillis definition clearly includes hiding cover as an essential component of elk security. This paradigm continues to be used as a valid measure of elk security to date. For example, in a recently-published research paper by personnel of the MFWP (Proffitt et al. 2013 at page 517) used the Hillis Paradigm as their measure of elk security.

The requirement of hiding cover for elk security is based on long-term studies in Montana. In 1982, the Montana Cooperative Elk-Logging Study annual program report (Lyon et al. 1982), including the following research results from one of their study areas, in the Chamberlain Creek area:

-security should contain a fairly large acreage of forest cover at the head of a drainage; the particular acreage required will depend on cover quality, but the areas available to elk in one study area were about 5,000 acres, and this size also approximated the average summer range used by several radio instrumented animals in another study.

-elk use of the study area relative to overstory canopy coverage following a consistent pattern throughout the 1981 field season; the majority of use was in the stands with 75-95% canopy coverage; this use significantly exceeded availability during each season, and over all seasons; use of stands with 25-75% canopy coverage was consistently below availability, significantly so during the summer and rutting season; use of stands with less than 25% canopy coverage was significantly less than availability during the hunting season.

-densely stocked mature to old, mixed species stands consistently received more use than availability, significantly so during the rut, and over all seasons; densely stocked pole to young aged, mixed species stands received more use than availability for each season; this is demonstrated in Table 26.

-a general preference for moderate to densely stocked stands was apparent during the rutting season.....during the hunting seasons, a more

specific trend was noted, that dense, mixed species stands received the majority of sue; this was in part due to elk avoidance of hunter presence.

-little preference to respect to vegetative factors occurred during the rut, but there appeared to be a preference for more dense stands during the hunting season.

-our telemetry study was now been conducted for 5 years, providing a large data base from which to evaluate elk habitat use; elk are large generalist herbivores that range widely in search of adequate amounts of quality forage; our results indicate that elk select from available habitats based upon forage and cover preferences....during the rutting season there was an apparent preference for dense to moderately dense stands; during all seasons elk show a general avoidance of human disturbances; they selected for sites that were greater than 0.5 miles from logging or road construction.

In 1992, lead investigator of the 15-year Montana Cooperative Elk-Logging Study, Dr. Jack Lyon, coauthored a published paper on habitat sections by Rocky Mountain elk under hunting season stress (Lyon and Canfield 1991). They reported the following:

-at every level of analysis we detected response to some function of road density or distance to roads; in addition, we discovered that elk consistently select a conformation of habitats that provides access to larger, continuous forest communities in the environment; the size of the smallest accessible community doubled when the hunting season began.

-managers interested in providing security during the hunting season have 2 general approaches to the problem; road closures, either permanent or seasonal, will effectively increase security for hunted elk; but a more productive considerations involves prevention of habitat fragmentation; retention and creation of large connected blocks of homogenous canopy structure should become a primary goal in elk habitat management for security.

5. The agency is using the RFP direction to escape NEPA in order to conceal significant adverse impacts on wildlife that will be triggered by the proposed project.

The agency's failure to measure elk displacement in the project area during the summer is justified in part by the RFP direction that allows the discounting of many of the roads that would be used during project implementation (see Table 29 in the project EA at page 90). General season security, or security outside the hunting season, is not measured during project implementation, so has no actual value for elk habitat effectiveness during the 10 or more years of this project. The same is true of elk security in the fall hunting season; roads used for logging activities, if they are not open to the public and will be obliterated after the project, are not measured during project activities. These 2 measures of elk security have no actual biological meaning as per RFP objectives, as they are not based on any actual science. Thus these 2 RFP objectives cannot be used to measure the significance of project impacts.

In particular, the agency's use of the measure if a road is open to the public has no biological basis. We are not aware of any measures of elk habitat effectiveness or road displacement impacts that are based on type of vehicle that is on the road. Although restriction of the public may possibly reduce illegal hunting, we are not aware of any actual information on this topic. The actual measure of elk displacement from roads is the traffic level. In the collaborative work between the MFWP and the Forest Service (Canfield et al. 2013, final report, page

The agency also used a measure of "elk secure area" to evaluate project impacts on elk (see table 29 at page 90). Elk secure area was a term borrowed from the grizzly bear conservation strategy which used 10 acres of area over 0.33 miles from an open motorized route (RFP glossary 302). There are no management recommendations that we are aware of that suggest this is a valid biological term for elk, and is clearly hugely different from the current best science, the Hillis Paradigm (defined in the RFP glossary at 288). Not only is the minimum size 25 times smaller than required for the Hillis Paradigm, but the BDFN definition of elk secure habitat does not require hiding cover. Thus if there is a clearcut several hundred acres in size that is over 0.33 miles from an active motorized route, this qualifies as elk secure habitat. So although the agency's analysis of elk secure habitat in the Red Rocks Project for both summer and fall addresses all active motorized routes, secure habitat can be restored once the active motorized route has been closed to motorized use. Thus there is no apparent impact on this BDNF definition of elk security regardless of whether or not hiding cover is removed. So it is not a valid measure of project impacts on

elk security. In addition, the RFP does not have any actual requirements for any given level of the BDNF definition of elk security. It is noted to be 30% of the Red Rocks project area after project completion, and some roads are closed. However, how this level of BDNF secure habitat affect elk vulnerability is not possible to determine. So again, the significance of any changes in this BDNF measure of elk security is unknown.

The agency's use of the RFP to escape doing a valid assessment of project impacts on elk vulnerability means that the Red Rocks EA fails to provide any valid measure and disclosure of project or cumulative impacts on elk. In a collaborative report by MFWP and the Forest Service, it was noted that a review of the scientific literature regarding elk, roads and traffic provides strong evidence that elk use declines as traffic volume increases (5 published papers cited, page 15 of Canfield et al. 2013). This report at 18 cites another Forest Service report, Christensen et al. (1993) that reported that any motorized vehicle use on roads will reduce habitat effectiveness. This report also concluded at page 18 that low intensity occasional administrative travel and management activity on routes closed to the public could be reasonably excluded in habitat effectiveness analysis, but consistent frequently-used nonpublic routes or temporary roads would detract form habitat effectiveness if such roads are used during the summer.

There is essentially no valid analysis of elk vulnerability in the Red Rocks project record, even though this is recognized as an important ongoing issue with elk management in Montana. As was noted in the collaborative report by the MFWP and Forest Service, one of the driving factors in the security area discussion was to try to reduce or eliminate elk displacement from public lands prior to normal migration events so that elk are available to the hunting public on public lands should be considered (Canfield et all 2013 at 16). Page 5-6 of this report notes that in some areas of Montana, the distribution of elk has become a primary management issue; in some areas elk are present and spending significant amounts of time on private lands; issues with displacement from public lands to private lands, or disproportionate use of private lands, are widely recognized. Subsequent to this report, MFWP issues extensive comments on the Helena National Forest's proposed travel plan for the Divide Travel Plan (MFWP June 2012). The issue of displacement of elk from public to private lands in the hunting season was repeated numerous times throughout these comments. The failure of the Red Rocks NEPA analysis to address this issue is clearly not due to a lack of awareness.

The issue of elk displacement to private lands in the hunting season has also been a new topic in recent years. In 2014, the Chronicle published a story by Lundquist on this issue, including a colored map showing all the hunting units in Montana and their population status, including if they were under, at or over population objectives. In 2017, Eve Byron published a story on this issue in High Country News; this article included a notation that 85% of Montana hunters don't fill their elk tags because elk move to private lands; inability to harvest elk on private lands has resulted in excessive elk numbers in many areas of the State: currently Montana's elk population need to be reduced by about 29,000 animals to meet MFWP population goals. Dickson (2015) reported that 58% of Montana's elk herd units that have population goals exceed these goals; MFWP is looking to boost elk harvests to reduce/control numbers by trying to get more land owners to open their lands to hunting.

B. The agencies are violating the ESA, along with the NFMA, the NEPA and the APA, by failing to promote the conservation of the proposed wolverine, by failing to use the current best science in the project analysis, by failing to identify numerous reasons why this project will have significant adverse impacts on the wolverine, by failing to complete a Forest-wide biological assessment and complete forest-wide consultation on the wolverine, and by failing to complete a site-specific biological assessment, and thus to seek a biological opinion, of the Red Rocks project on the proposed wolverine.

Even though there will be winter logging (project EA at 95), even though there will be 2,638 acres of slashing/burning of critical elk winter range in the spring when wolverine would be using these areas seeking elk carrion and elk calves, even though there will be 762 acres of destruction of forested elk winter range, even though there will be 2,328 acres of large openings created, which is 65% of the total proposed clearcutting, even though there will be 3598 acres of wolverine prey habitat, including for snowshoe hares and red squirrels destroyed with the project, even though there will be a total

of 19 miles of new roads created, roads which is be available for winter snowmobile use, the agency determined that there will be no direct affects to the wolverine (e.g., EA 81). The agency claims that only 34 acres of the project area is wolverine habitat that would be affected by logging The estimate is that only 0.3% of wolverine habitat in this landscape will be impacted by the project.

The agency claims that only the high elevation, treeless areas are wolverine habitat. Since there are no trees to log in these areas, the agency thus claims that wolverine habitat will not be impacted.

It is not clear specifically why the agency claims that wolverine are limited to high elevation treeless habitat. In 2010, an independent research group did surveys for wolverine in the Red Rocks Project Area (Gehman et al. 2010). The wolverine travel activity documented clearly overlaps with logging units and new roads.

1. There will be new roads built to access a group of units 78A, 78B, 78C and 77, in a currently unroaded landscape that was used by wolverines in the 2010 winter survey..
2. There will be new roads built to access a group of units 76A, 76D, and 76C, in currently unroaded landscape that was used by a wolverine in the 2010 winter survey in this vicinity..
3. There will be new roads built to access a group of units 76G and 76F in a currently unroaded portion of this landscape, including where a wolverine was documented in this vicinity in 2010.
4. There will be new roads built to access a group of harvest units 76D, 75, and 398 in an area that is currently unroaded, and is in the vicinity that was used by a wolverine in the 2010 winter survey.
5. There will be a new road built to access uni8t 72B in the vicinity that was used by a wolverine in the 2010 winter survey.

Also, about one mile to the north of these proposed new roads, several branches of a new road will be built in unroaded habitat to access unit 63.

The wolverine surveys in 2010 also reported that a wolverine was traveling along the Boulder River drainage in the critical elk winter range, directly south of proposed logging units 451, 441, 424 and north of 448. Elk carrion was found in one of the wolverine scats.

Gehman et al. (2010) summarized the travel routes of a wolverine trail following on February 7-8. This travel was predominately in various levels of forest canopy, from Douglas-fir open and dense forests to dense lodgepole pine forests. It is clear that forested cover was very important to the wolverine during these travels, including dense old growth forests. It was also clear that the wolverine was traveling through areas where elk were present, as well as had been feeding, as well as along moose trails. It is also clear that this wolverine commonly traveled in the drainage bottoms. This monitoring data, the only information that is apparently available for wolverine use in the Red Rocks project area, directly contradicts the assumptions made in the NEPA analysis that wolverine basically do not use most of the project area.

Gehman et al. (2014) provided supporting information in regards to wolverine use in this area of the Rockies. Average winter elevations wolverine use was recorded in "hot spots" on the Helena National Forest in the winter were 5965, with 4960 the minimum. Among their findings were that these wolverine hot spots in the winter did not have persistent snow during those seven years of survey, and presumably would not have been considered good wolverine habitat. Their data contradicts the definition of wolverine habitat based on elevation and/or persistent snow; their data demonstrated that the Ogden Mountain to Nevada Creek Region represents valuable and heavily used wolverine habitat that would not even be considered as wolverine habitat in other analyses; wolverine were using areas with a high density of prey, including snowshoe hares, red squirrels, and wood rats, along with a abundance of carrion in the form of big game animals that had been killed by larger predators, such as mountain lions and wolves. They also noted that these areas had a high level of secure habitat for the wolverine due to the dense understory in the forests; numerous understory areas of vegetation were nearly impenetrable to humans, and were likely patches of secure habitat for the wolverine; they also noted that large boulder fields collected ice that persists into summer, resulting in cooler temperatures that may be attractive to wolverine and may serve as a substitute for higher elevations in the summer.

In a large-scale study ongoing by Heinemeyer et al. (2019) where wolverine habitat use has been monitored on 4 National Forests in Montana, Idaho and Wyoming, they found that both sexes of wolverine showed a strong selection for drainage bottoms, and also selected for riparian areas; also, males strongly selected for fir forests.

A noted by both of the Gehman monitoring projects, wolverine in this landscape travel and search out big game carrion on winter ranges. Thus the clearcutting of 762 acres of elk critical winter range will result in the reduced availability of winter carrion for the wolverine. Spring treatments on these winter ranges will also displace elk during the calving season, and again, reduce elk calf availability for the wolverine. Wolverine are known to kill elk calves (Kuglin 2018). Wolverine can also at times take down elk in the right snow conditions. Id. This clearcutting of forested habitat across the project area will also reduce winter habitat for the moose, which are known to winter in this area (Gehman et al. 2010). Moose are heavily dependent upon late successional old growth forests in the winter for both forage and thermal cover, as well as uncrusted snow conditions (Tyers 2003). Wolverine are known to consume moose carrion in the winter, and this can be an important winter forage source (Scrafford and Boyce 2018). This study also noted that snowshoe hares, as well as beaver, were important winter food sources for wolverine in Alberta. Ungulate carcasses were particularly available to wolverine in the spring in that study, because big game species were in a weak condition after the winter. This makes the planned burning and slashing of this winter range a direct adverse impact on wolverine.

A reduction in the acreage of forested winter range due to clearcutting will clearly have an adverse impact on wolverine, who are known to require very large areas to scavenge (Ray 2019). Reproductive rates for wolverine are believed to be driven by the availability of winter carrion (Fisher et al. 2013). Lower elevation winter ranges are believed, as a result, to be critical to wolverine for winter foraging. Id.

Wolverine have been documented to be less likely to occur in areas of forest harvest (Fisher et al. 2013). This impact may be attributed to the loss of cover. Id. However, this impact is also related to habitat disturbances associated with logging, including roads. Overall, wolverine have been documented to be highly sensitive to the "human footprint;" adverse effects of human activity have been attributed to not only roads, but other activities such as logging (Fisher et al. 2013; Stewart et al. 2016; Scafford et al. 2018; Heinemeyer et al. 2019). This sensitivity is not only due to roads (Id.), but also occurs to human recreational use in wolverine habitat (Heinemeyer et al. 2019); they concluded that human recreational activity resulted in an indirect habitat loss to wolverine by displacement; disperse and off-road

recreation resulted in a greater response than did recreation on roads; avoidance response increased with the intensity level of this winter recreational use. This study, along with documented avoided of roads by wolverine, clearly indicates that logging activities, along with the roads that are created, will have significant adverse impacts on wolverine.

In 2014 Region 1 of the Forest Service completed a biological assessment of timber management activities on the wolverine (Red Rocks EA 282). This BA and the FWS consultation as well determined that vegetation management and associated roading posed no conservation threats to the wolverine. The analysis in the BA and BiOp do not include any of the current science published on the wolverine, so the 2 analyses are stale. However, those 2 documents are a direct contradiction to wolverine management recommendations that did exist at the time. The Rocky Mountain Research Station of the Forest Service (Ruggiero et al. 1994) published a summary of conservation issues and needs for various forest predators, including the wolverine. Among other things, this review noted that carrion on big game winter ranges was very important to wolverine; wolverine would be impacted by extensive logging and the accompanying access; the scientists that authored this review concluded that a conservation strategy for wolverine requires refugia free of human activities.

The agency's claim that wolverine would not be directly impacted by the Red Rocks vegetation project is not only inconsistent with older and more current science, but it is not supported by any Forest monitoring. The wolverine has been designated as a management indicator species for the BDNF. The monitoring section of the RFP indicates that population trends of this MIS will be monitored in order to measure impacts of land management activities. There were no results of any population monitoring that has been done for the MIS wolverine, even though the RFP was implemented over 10 years ago, i8n 1997. It is clear that the BDNF is in violation of the NFMA in a failure to implement the monitoring program required by the RFP.

The project area contains massive amounts of roads. Appendix C of this objection includes 2 large scale maps of the project area that displays most of the current roads. It is clear that most of the project area is severely degraded for wolverine due to these roads, given that the current best science includes at least 4 recent publications that identify the aversion of wolverine to roads. In addition, the NEPA analysis does not identify that traffic levels

will impact avoidance of roads by the wolverine during project activities. The project EA at 52 identifies 134.3 miles of existing roads that will be used for the project, and will have increased levels of traffic as a result.. There will also be almost 20 miles of new roads constructed for this project, including an undisclosed mileage in currently unroaded areas. The proposed action is a violation of the ESA, the NEPA, and the NFMA by failing to not only promote the conservation of this proposed species, but by failing to disclose the current degraded condition of this habitat, a degraded condition that will be exacerbated by this proposed project, to the public. This type of none-management of this proposed species on the BDNF is clearly jeopardizing its recovery.

C. The agency is violating the NEPA, the NFMA and the APA by failing to ensure a diversity of old-growth associated wildlife in the Red Rocks project area, by applying invalid RFP direction that ensures progressive extinction of such species across the forest; there was no programmatic analysis of the RFP direction for old growth management, and therefore a site-specific analysis was required for the Red Rocks project, although none was done; a site-specific analysis would demonstrate that past and planned logging has had, and will exacerbate logging impacts on old growth – associated species; in addition, the agency is not actually applying RFP direction to old growth management in the project area, without completing a Forest Plan amendment.

In 1990, Region 1 of the Forest Service released a report on old growt-associated wildlife (Warren 1990), a report that identified at least 17 bird species, and at least 4 mammal species other than bats, as associated with old growth. In 2018, the Flathead National Forest provided a similar summary of old growth associated species (USDA 2018). This report includes at least 22 bird species that could occur in the Red Rocks project area, and at least 4 mammal species other than bats that could occur in the

project area. One notable old growth associated species that occurs in the project area (Gehman et al. 2010), is the moose (Tyers 2003).

The RFP includes limited direction for old growth. There is an objective to have it well distributed across the Forest. The current best science for well distributed habitat for wildlife is approximately 10,000 acres (Suring et al. 1993. This is somewhat larger than a 1978 recommendation that by Bull that old growth be distributed roughly every 6,300 acres. In the Red Rocks project area, distribution of old growth would be well distributed if it occurred in each of the 6 watersheds (Table 34, EA 109). Although these are somewhat larger than 10,000 acres, watersheds are believed to make a good ecological measure of wildlife habitats (Canfield et al. 2013).

There is no analysis in the project record that we could find that defines what the current distribution of old growth is within the Red Rocks project area. NEC submitted a FOIA to the Forest Service to obtain any inventory data on old growth, and was told there was no such information, including identified stands or any mapping.. The EA notes there is an estimated 14% old growth in the Boulder River Landscape, which consists of 218,112 acres. The project area forest consists of 76% lodgepole pine (EA 43, Table 10). Lodgepole pine old growth would have 12 trees per acre over 10 inches dbh as per Green et al. 1991. The EA at 42 identifies 34 harvest units that could be lodgepole pine old growth, or potential old growth. This is 923 acres of logging, or 26% of the total harvest acres planned. There is apparently no actual verification as to whether these stands are old growth. However, even if they are too young to be old growth, they are likely still functional old growth by having high numbers of snags and a developing understory of subalpine fir. The RFP allows logging of old growth if the minimum number of large old trees are maintained. Of the proposed 34 units in this Red Rocks Project that are current or developing old growth, the RFP allows logging down to just 12 trees per acre over 10 inches dbh. The problem with this is that these trees would most likely blow over. And in fact, there is no discussion in the EA as to what will actually be done in these 34 units. It appears that the RFP direction will be violated by the proposed salvage and thinning of these stands. Also, almost all the harvest units are sanitation/salvage and thinning in lodgepole pine. The EA at 49 states that they are going to leave 6.4 trees per acre for snags and green-tree retention. This is not the number of green trees per acre required to be left in lodgepole pine old growth, which is 12 trees per acre. In addition, the 6.4 trees per acre to be left can include both green and dead. It is clear that the agency will not

leave the number of green trees required to be left in lodgegpole pine old growth. The agency needs to complete a Forest Plan amendment to clearcut these developing old growth stands of lodgepole pine. Project impacts will also be significant due to this failure to adhere to the Forest Plan not only to ensure old growth is well distributed, but is not logged below the minimum number of large trees required for old growth.

In addition, there was no analysis in the RFP FEIS as to why old growth values for wildlife would be maintained with heavy thinning. As such, there needs to be an analysis at the site-specific analysis. No such analysis was provided in the Red Rocks NEPA documents. This analysis would clearly show that old growth forests cannot be logged down to a few trees and still maintain values for most old growth species. In a research program funded by Region 1 of the Forest Service, Hutto (1995) found that 13 bird species are generally intolerant of logging; these species include 11 old growth-associated species. Other old growth species that would have old growth habitat values destroyed with logging include the moose, as it requires a subalpine fir understory and thermal cover on winter range (Tyers 2003). The pine marten would lose its winter habitat with logging, not only due to the loss of downed logs and thermal cover that moderate snow conditions and crusting, but marten would like avoid these logged stands due to thinning and a loss of cover (Moriarity et al 2016). Goshawk nesting habitat needs to have a high canopy cover (Reynolds et al. 1992). And great gray owl nesting sites need both good canopy cover to conceal young from predators, and extensive downed and jack-strawed logs so young fledged juvenile owls can scramble up high to avoid predators (Franklin 1988). Thus sanitation and salvage activities in old growth would remove essential habitat features for all of these old growth associated species.

Salvage logging in old growth habitat would also eliminate snag habitat. The Flathead National Forest identified a host of forest birds that depend upon snags (USDA 2018). Bull et al. 1997 noted that this suite of species generally includes 25% of forest birds. High densities of snag habitat in old growth forests, including those impacted by mountain pine beetles, likely provide a critical source of nesting habitat for many cavity nesting birds, given that only 4% of snags may be suitable for cavity construction. The average number of larger snags per acre recommended for viability of cavity nesting birds is 4 per acre (Bull et al. 1997). If only 4% of snags are suitable for cavity construction (Vizcara 2017; Lorenz et al. 2015), good snag habitat for wildlife would require 100 snags per acre. This is what lodgepole pine

pine beetle infestations can provide. Research on the Helena National Forest found that three-toed woodpeckers were nesting in beetle-killed ponderosa pine stands that had over 70 larger snags per acre (Saab et al. 2012). Even if lodgepole pine stands are not 140-150 years old as defined as old growth, these stands are still "functional old growth." Lodgepole pine actually functions a "early seral old growth" (Hamlin 1993) due to the high density of snags created. This makes lodgepole pine forests extremely critical to snag-associated wildlife, a value that is destroyed in salvage operations.

The current best science identifies that old growth forest within a given portion of a landscape should comprise from 20% to 25% of the landscape (Montana Partners in Flight 2000; Reynolds et al. 1992). This may be low compared to historical levels of old growth based on fire cycles. Lessica (1996) estimated that old growth comprised from 20-50% of historical landscape. McKelvey et al. (1999) also evaluated potential older forest habitats on historical landscapes, and depending on fire cycles, older forests over 100 years old may have comprised from 36% to 71% of a given landscape (page 429, Table 15.1). Regardless, given the vast acreage of logging that has occurred in the Red Rocks project area, the potential for remaining old growth is likely very small. In addition, the patch size for these old growth areas is also likely very small. For even small forest birds as the brown creeper, patches of old growth at least 250 acres in size are recommended (Wiggins 2005). For species as the three-toed and black-backed woodpecker, blocks of older forest habitat ranging from 500 to over 900 acres are recommended (Goggans et al. 1988). It is likely that current conditions for old growth in the Red Rocks project area are severely degraded and highly significant. However, without any actual analysis, it is impossible to determine how severe these impacts have been, or how the current proposal will impact the status of old growth.

D. The agency is violating the NEPA, the NFMA, and the APA by failing to manage for a diversity of wildlife species that require snag habitat; the agency has no valid proxy in the RFP to measure population persistence of a large suite of bird species reliant on snag habitat, including migratory birds; the level of large snags over 15 inches dbh in the project area is far below the direction required in the RFP, but the agency has not completed a Forest Plan amendment to allow further reductions in large snag habitat; the agency has failed to identify to the public the severe loss of snag habitat that has occurred, and will continue to occur, in the Red Rocks Project Area; the

severe significant impacts on snag habitat that will be exacerbated with the proposed project require completion of an EIS.

The Flathead National Forest did a recent survey of all wildlife species that are dependent upon snag habitat (USDA 2018). This report identifies at least 29 bird species that could occur in the Red Rocks project area. The BDNF RFP has no proxy that measures the population persistence for these 29 bird species on the Forest. The proxy for these species uses a measure of large snags averaged out across a vast landscape, which for the Boulder River landscape i9s 218,112 acres. Thus large areas of the landscape that lack snags can occur, even though the proxy shows that cavity nesting birds occur on these acres. The average home range size for the hairy woodpecker is roughly 25 acres (Bull 1978). This is the area measure that needs to include meaning.

At the project level, it is clear that the RFP snag proxy shows a severe lack of snag habitat for wildlife. Table 2 in the EA at page 4 shows that for snags over 15 inches dbh in the project area, there are only 1199 acres in the total forested habitat of 67,364 acres. This means that the RFP snag proxy required for 29 wildlife species is only 9%of the project area. The RFP has no requirement for a percentage of the landscape that must meet the snag proxy of 6.4 snags per acre over 15 inches dbh. But attainment of this proxy on only 9% of the project area would seem to indicate a significant lack of snag habitat. However, this severe lack of snag habitat proxy for 29 bird species is never identified as a conservation issue for snag-associated wildlife in the NEPA analysis for this project. The agency has clearly failed to disclose a severe habitat problem to the public. Also, the agency has failed to disclose that the snag proxy for wildlife in the RFP cannot possibly be met in the project area. The agency did not complete a Forest Plan amendment to allow this continued Forest Plan violation.

The minimum dbh required for most snag-associated wildlife is 10 inches (Bull et al. 1997). These snags must be in a forest as well. Id. The project EA at 71 notes that it takes 40-60 years for trees in the project area to reach this minimum dbh for the black-backed woodpecker. Thus clearcutting has a long term impact on the availability of snag habitat for most associated species. Currently, the Red Rocks project area has a severe shortage of snags over 10 inches dbh. Table 2 in the EA at page 4 shows the following tree size composition on 67,364 acres of public forests in the project area:

Lodgepole pine: 4715 acres out of 51,915 forested acres
Douglas-fir: 5927 acres out of a total 9934 forested acres
Spruce: 2730 acres out of a total 3980 forested acres
Subalpine fir: 17 acres out of 21 total forested acres
Whitebark pine: 93 acres out of a total 1514 forested acres

Thus total forested acres that have snags at least 10 inches dbh is 13,486 acres out of a total 67,364 forested acres. This is only 20% of the landscape that has suitably-sized snags for wildlife. In the lodgdepole pine forests, which comprise 77% of the landscape and occur at suitable elevations for wildlife, only 9% (4715 out of 51,715 acres) that have suitably-sized snags for wildlife. The proposed harvest will remove another 3828 acres of forested snag habitat, bringing suitably-sized snag habitat in this project area down to 14%. However, this severe lack of snag habitat for wildlife is never identified as a significant cumulative impact in the NEPA analysis for the Red Rocks project, in violation of the NEPA. It is clear that significant impacts on snag habitat already exist, and will be exacerbated by more logging. The agency is violating the NEPA by failing to complete an EIS.

The EA notes that the black-backed woodpecker, a sensitive species on the BDNF, requires forest patches on the average of 242 acres. This is a very conservative measure of forested habitat acreage required by this species, as Goggans et al (1988) recommended up to 500 and 900 acres of habitat for the black-backed and three-toed woodpeckers. An optimistic measure of availability of these forested snag patches would be 20% of the Red Rocks project area. When fragmentation impacts are considered, it is likely that this suitable habitat for this sensitive species is considerably less than 20% of the project area. The proposed reduction to 14% of the project area would also likely provide even a lower level of habitat for this sensitive species after logging and additional fragmentation.

Although the EA notes that black-backed woodpeckers will use snags that have a 10 inch dbh, there are no snags required on the BDNF that are under 15 inches dbh. So claims that the RFP snag direction helps to conserve this sensitive species is false, as the large majority of forests that have these smaller snags are not required to have snags retained in harvest units. This snag management policy is clearly evident in the project EA as per figures that show recent roadsize hazard clearcuts. No snags are visible in any of these units (Figure 38, 47 and 48).

There is no analysis in the NEPA record for this sensitive species to indicate that any surveys were done, or that blocks of suitable habitat were identified for protection. It is clear that this sensitive species has been significantly impacted by past logging, and will suffer additional impacts with the proposed project. The agency has failed to provide any analysis to indicate that this logging program has not, nor will not, eliminate this sensitive species from this landscape, impacts that were certainly be significant and require an EIS as well as a Forest Plan amendment, since the RFP claims that sensitive species, including the black-backed woodpecker, will be maintained on the forest. If management practices are not maintaining this species in this project area, it is certainly possible that similar management practices in other areas of the BDNF will have similar impacts.

There is no analysis in the NEPA record for this sensitive species to indicate that any surveys were done, or that blocks of suitable habitat were identified for protection. It is clear that this sensitive species has been significantly impacted by past logging, and will suffer additional impacts with the proposed project. The agency has failed to provide any analysis to indicate that this logging program has not, nor will not, eliminate this sensitive species from this landscape, impacts that were certainly be significant and require an EIS as well as a Forest Plan amendment, since the RFP claims that sensitive species, including the black-backed woodpecker, will be maintained on the forest. If management practices are not maintaining this species in this project area, it is certainly possible that similar management practices in other areas of the BDNF will have similar impacts.

D. The project will continue, plus exacerbate, existing significant impacts on the threatened grizzly bear; also, the failure of the agency to provide for dispersal of grizzly bears along the continental divide threatens the long-term viability of the Greater Yellowstone grizzly bear population due to the need for genetic interchange between this and the Northern Continental Divide Ecosystem grizzly bears; these include violations of the NEPA, the NFMA, and the ESA.

The project BA at 26 notes that the current condition in the project area adversely impacts grizzly bears. It is thus unavoidable that the Red Rocks project will exacerbate these adverse impacts. These adverse impacts require the completion of an EIS, and consultation so that alternatives actions that will promote grizzly bear conservation can be identified and implemented. For example, the construction of almost 20 miles of new roads for this project is a direct conflict with management of grizzly bears. Even though roads will be closed and/or obliterated, they will remain available for illegal ATV use, and foot travel by people, including hunters. Conflicts with hunters is one of the know mortality risks to grizzly bears along trails (Schwartz et al. 2010). The Interagency Grizzly Bear Committee (1998) notes that roads still count against the total road density if they are still used as a road, or will be used again in the future for management activities. Mace and Manley (1993) specifically noted that unless a closed road has

grown in with forested vegetation, it needs to still be counted as a road for grizzly bear management.

The RFP management for grizzly bears prevents dispersal across the BDNF and prevents recovery of grizzly bears into this historic habitat due to invalid protective measures. The BDNF defines grizzly bear security as 10 acres further than 033 miles from an open road. The current best science defines secure areas for the grizzly bear as 2500 blocks of secure habitat across 68% of the landscape in the NRDC landscape (NCDE Access management rule set proposed direction 2002). In the Yellowstone ecosystem, security for grizzly bears is recommended to be 7,000 acre areas and cover 57% of the landscape (Mattson 1993). The availability of secure areas for the grizzly bear was the major reason by Cairniello et al. (2007) reported a significant difference (4 times) in the density of Alberta grizzly bears in protected versus developed areas. Simply providing large secure areas for grizzly bears will not meet conservation needs unless open road densities within the intervening landscape is limited (Schwartz et al. 2010); otherwise bears traveling between secure areas will be exposed to mortality risks from human due to high densities of open roads.

Open road densities on grizzly bear landscape in the Yellowstone ecosystem are recommended to be 0.6 miles per section overall. In the NCDE ecosystem, open road densities are recommended to be no higher than 1 miles per section (Mace et al. 1996). The Montana Department of Fish, Wildlife and Parks has a grizzly management strategy that would limit open road density in the Red Rocks project area to less than 1 mile per section (see comments on the proposed project). The early recommendations for limiting open road densities in grizzly bear habitat continue to be supported by more recent research. This research also supports the proposed limits on total road densities to less than 2 miles per section (Mace et al. 1996). These includes publications by Lamb et al. 2017, who recommends a limit of open road densities in core grizzly bear habitat of 0.96 miles per section, and no more than 1.92 ,miles per section in secondary grizzly bear habitat. Boulandger and Stenhouse (2014) found that grizzly bear survival rates in Alberta were directly correlated with open road densities. Wielgus et al. (2002) reported that grizzly bears in Alberta not only avoided open roads, but females also selected against closed roads. They noted that these findings were similar to those reported by Mace et al. (1999), where female grizzly bears selected against closed roads as well as open roads. They also

noted that predictable use on roads had a lower impact on grizzly bears that off-road human use.

The BA for the Red Rocks projects claims that vegetation management has no impact on grizzly bears. No actual references were provided to support this claim. At a minimum, the amount of cover along open roads will affect grizzly bear displacement (Mattson 1993). Also, the lack of hiding cover in harvest units has a good potential to cause grizzly bear avoidance. In the Yellowstone ecosystem, Blanchard (1983) reported that grizzly bears were strongly associated with cover in both foraging and bedding activities. More recently Apps et al. 2004 reported that grizzly bears in Alberta had a strong avoidance of very young logged forests. Also, the use of whitebark pine nuts by grizzly bears is dependent upon populations of the red squirrel (Reinhard and Mattson 1989; Kendall 1981). Logging of lower elevation forests adjacent to whitebark pine habitats will reduce squirrel populations, and thus reduce availability of whitebark pine nuts to grizzly bears. And also, as reported by Canfield et al. (2013), logging results in a reduced availability of succulent green forage in late summer due to a lack of shade in logging units. This means that forage for grizzly bears can actually be reduced late summer due to logging.

An indirect effect of vegetation treatments is that traffic levels on existing as well as restricted roads will increase significantly, which will increase the displacement impact of these roads even if mileage does not increase. The level of vehicle traffic affects grizzly bear use next to roads. Mace et al. (1996) found that bears avoided road buffer when vehicle use was more than 10 vehicles per day. Thus logging traffic on roads will increase displacement of grizzly bears during long-term projects, such as the Red Rocks project.

In summary, there are no conservation measures in place for the grizzly bear in the Red Rocks Project Area, even though it is a threatened species. The project will increase "take" of grizzly bears, even though current levels of take are likely inhibiting genetic interchange with the Yellowstone population. The agency provided no rationale as to why there are no defined conservation measures for the grizzly bear is this recognized linkage area. This lack of management is not only a violation of the ESA, but also the NFMA because the grizzly bear is clearly a sensitive species on the BDNF, which requires effective mitigation measures during vegetation management. Without any mitigation measures, the agency cannot claim that the impacts on the bear will not be significant.

E. The agency is violating the RFP by failing to conduct adequate surveys for the goshawk and great gray owl; the RFP requires that buffers be maintained around nests for either species during vegetation management; this cannot be done without adequate surveys, which have not been completed in the Red Rocks Project Area based on FOIA responses.

There have been no surveys for the great gray owl in the Red Rocks project area. There were 4 days of surveys conducted for the northern goshawk within this project area of over 70,000 acres. No goshawk nests have been identified. Given the average territory for a goshawk is roughly 6,000 acres, there was a historic potential for approximately 12 nesting pairs of goshawks. The remaining older forest habitat in this heavily-logged landscape may be inadequate for goshawk prey populations (snowshoe hares and red squirrels) to support reproduction in most areas of the project area. However, goshawks were observed during the surveys, and apparently some still use this landscape. Since no remaining nesting areas have been identified, these will likely be destroyed during the project.

Unlike the BDNF, the Targhee National Forest has conservation measures (standards and/or guidelines) for both the goshawk and great gray owl on the Forest (USDA 1997). They also continue to do surveys for these species when vegetation projects are planned (personal communication with Sabrina Derruseau, Forest Service biologist, April 2019).