

Objection against the Elk Smith Project 36 CFR 218, Subparts A and B

1. Objectors Names and Addresses, and Telephone Numbers:

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Signed this 25th day of May, 2019 for Objectors



Sara Johnson

This objection includes 2 appendices, Appendix A on lynx citations, and Appendix B on wolverine citations.

2. Name of the Proposed Project, Name and Title of the Responsible Official, Name of the National Forest and/or Ranger District on which the Proposed Project will be Implemented:

Elk Smith Project
Michael Munoz, Responsible Official
Rocky Mountain Ranger District
Helena - Lewis and Clark National Forest

3. A Statement that Demonstrates Connection between Prior Specific Written Comments on the Particular Proposed Project or Activity and the Content of the Objection:

NEC and AWR submitted comments on the proposed Elk Smith Project preliminary analysis on September 28, 2016. The first issue we raised was the management intervention into this inventoried roadless area, which is a violation of the Roadless Area Conservation Rule (RACR). As noted in our comments, this intervention will degrade habitat for 2 threatened species, the grizzly bear and Canada lynx. We also noted that there are no exemptions for management intervention within an IRA unless there is a demonstrated need for ecological recovery. The dense young lodgepole stands that have developed after the Canyon Creek fire, as well as the standing snag forests and extensive downed logs, are natural conditions that do not have to be removed from this IRA. We have carried this issue forward into our objection, with an emphasis on adverse impacts on lynx allowed via existing agency management activity, the Lynx Amendment, that is being used to create adverse impacts to the lynx.

We raised a concern about the project's impact on hiding cover for wildlife, including elk, lynx and grizzly bears. The draft analysis did not clearly define existing or planned levels of hiding cover. The draft EA claims to provide an analysis of hiding cover, but it seems highly unlikely that the very high levels of hiding cover claimed as present in this project area are valid. The final analysis did not provide any maps of hiding cover, or any information as to how it was measured in the project area. The levels of hiding cover need to be accurately disclosed, as the proposed treatments to restore habitat in this IRA need to be based in part on the need to reduce hiding cover for wildlife as a benefit.

We raised a concern as to why the proposed removal and degradation of critical lynx habitat is not a significant impact, which would require an environmental impact statement instead of an environmental assessment. This issue goes back to the Record of Decision for the Lynx Amendment, which has arbitrarily defined extensive adverse impacts on lynx as an effective conservation measure. This application is clearly invalid, and is discussed extensively in this objection.

We raised the issue as to why the Lynx Amendment VEG S2 standard does not apply to prescribed burning. The response to comments did not define why openings created by logging have different impacts on lynx than openings created by burning and slashing. We carried this issue forward into our objection.

We raised the issue that the Lynx Amendment allowance of extensive removals of dense young regenerating forests that provide lynx winter habitat is a violation of the ESA, and we have carried this issue forward into our objection. We provided more discussion of this issue in our objection in regards to the problems with the Lynx Amendment to support our contention that this Lynx Amendment jeopardizes the persistence and recovery of the lynx on all landscapes where it is applied. The reasons why we believe this to be the case were fleshed out in our objection over the comments provided on the draft analysis.

We also raised many concerns about how this project will affect the threatened grizzly bear. In the response to comments, the agency did not demonstrate how increases in forage for the grizzly bear as a result of the burning were determined. There was also no response as to why more forage instead of hiding cover is required in this management situation habitat for grizzly bears. We also noted that the project will require extensive and relatively long-term disturbances for the grizzly bear. Since these treatments are not being done to promote conservation of the grizzly bear, the agency has not yet demonstrated that fuels management projects are valid in the grizzly bear core habitat. In particular, this project requires extensive disturbances of grizzly bear spring habitat in the spring. Protection of spring habitat from disturbance is one of the basic recommendations for grizzly bear management. The agency failed to demonstrate on the response to comments that there is a justified need to burn grizzly bear spring habitat to balance out the impacts of this disturbance.

The draft analysis failed to define why fires are an adverse impact on wildlife within the IRA, and thus need to be prevented as much as possible. It was never made clear why prevention of fire in this IRA has been implemented as the prime management objective. In the response to comments, the agency did not demonstrate how this emphasis on fuels reduction was developed for this IRA and for wildlife.

We raised the issue of repeat burning of these lands once new regeneration develops. There would be little difference between future conditions up to 30 or more years after burning than current conditions, except that there will be fewer trees due to a lack of seed sources. The strategy appears to be to maintain these forests in an unforested condition into perpetuity. However, this long-range strategy is never evaluated as per cumulative impacts. There is never any information provided as to what percentage of this landscape is planned to actually retain forests into the future, versus being maintained as openings. We carried this issue forward into our objection.

There was no response to our concern, in the agency's response to comments, in regards to what the level of expected regeneration will be after burning given that the conifer seed source is quite limited in many areas of this landscape due to the young age of the regenerating forest, and because the serotinous seed source that was present in the Canyon Creek fire no longer exists. We carried this issue forward into our objection.

In our comments on the draft analysis, we noted that there was no analysis of the acres of prescribed burning that have occurred in adjacent areas of this landscape, including the South Fork Sun prescribed fire on 16,000 acres. At a minimum, the agency needs to provide the monitoring data as to how these other burns have affected wildlife. Otherwise, the impacts of additional burns will be unknown. It is a violation of the NEPA for the agency to continue a burning program without monitoring the impacts, and potentially modifying future management activities as a result.

We raised a concern about the impact of burning and slashing on limber pine, a highly important tree for wildlife. There was no information on this issue provided in the agency's response to comments, and we have carried this issue forward into our objection.

We questioned the agency's claim in the preliminary analysis that this roadless area is not used by grizzly bears. We asked for supporting documentation in regards to this claim, but no such information was provided in the response to comments.

We asked for more information on the treatment of 1,360 acres of elk winter range, and 9,164 acres of elk calving habitat. These areas were not mapped in the released EA. We have a concern that this burning of big game habitat is highly detrimental to elk. We asked for the agency to provide the specific

habitat objectives that were being applied to this elk habitat, but none were provided in the response to comments or the draft EA. It is clear that the burning program is being done without any actual management direction for elk, including for elk security areas. We carried forward these issues into our objection.

Finally, we requested more information on what the habitat conditions were in regards to early stand initiation habitat for lynx in the surrounding LAUs. This information is important in order for the agency to demonstrate what the ongoing management program is for lynx, instead of just within LAU RM-25. However, this information was not provided in the draft EA, and as such, was carried forward into our objection.

4. Suggested Remedies in the Proposed Action that would resolve our Concerns:

The proposed project includes many legal violations, including the Endangered Species Act (ESA), the National Forest Management Act (NFMA) the National Environmental Policy Act (NEPA), the Administrative Procedures Act (APA), and violation of the administrative policy for the Roadless Area Conservation Rule. And this project has a high potential of permanently eliminating forested habitat within the affected IRA permanently. As a result, we believe this project should not go forward.

5. A Description of those Aspects of the Proposed Project Addressed by the Objection, including Specific Issues Related to the Proposed Project, and if Applicable, how the Objectors believe the Environmental Analysis Specifically Violates the Law, Regulation or Policy:

A. The agency is violating the ESA, NEPA and NFMA by using outdated, unvalidated management direction for conservation of the lynx; not only is this strategy in the Lynx Amendment outdated, but it is inconsistent with the management recommendations by Brittell and others (1989) that it is supposedly based on; those

recommendations did not direct that lynx habitat should be managed in “pieces” as is being done under the Lynx Amendment; management of lynx habitat in pieces jeopardizes the continued existence of lynx in Montana.

1. The Lynx Amendment claims to be based on previous management recommendations by Brittell and others (1989) when in fact these recommendations were not followed in the Amendment.

The Lynx Amendment ROD at 9 states that the 30% standard of limiting early stand initiation, or young clearcuts, is based on Brittell et al. (1989). However, Brittell and others (page 34 in Butts 1992, Table 2) recommended that 33% of lynx habitat on a square mile basis could be non-lynx cover; this includes grass-forb-shrub-seedling stand categories AND natural openings excluding water. The Lynx Amendment does not include natural openings in the 30% VEG S1 standard. There is no discussion in the Lynx Amendment FEIS or ROD as to why this change was made, or what science the change was based on. It is a significant change, as natural openings could represent quite a few acres within lynx home ranges. The cumulative impact on non-cover areas for lynx will be much greater in the Lynx Amendment that was recommended by Brittell and others, since natural openings are not counted against the 30% standard, as they would have been in Brittell and others (1989). This shows a clear bias in the Lynx Amendment to promote clearcutting over lynx habitat.

2. The Lynx Amendment not only is inconsistent with the Brittell and others (1989) management recommendations for lynx, but is also highly inconsistent with the current best science for lynx management; neither Brittell and others (1989) or the current best science for lynx published in 2017-2018 recommend managing lynx habitat in “pieces,” as is the strategy of the Lynx Amendment.

Brittell and others (1989) recommended that all habitat within a lynx home range, on a per-section basis, be managed for lynx (e.g., Table 2 at 34 of

Butts 1992). These recommendations did not include categories of non-lynx habitat, as is done in the Lynx Amendment. The Lynx Habitat Map for the Elk Smith Project is a perfect example of the piecemeal management proposed for lynx by the Lynx Amendment. There are 4 categories of lynx habitat defined on this map: early stand initiation, multi-story, stand initiation, and other/stem exclusion. These habitats are defined in the project BA, Table 3 page 10. All the intervening habitat in the LAU is colored white, and has no category assigned to it on the map. It is unclear exactly what these habitat categories are, or why they were identified as non-lynx habitat. What is clear is that lynx habitat is to be managed in scattered pieces within the LAU, with no apparent effects of management within the remainder of the landscape. As is noted in Table 3 of the project BA, these other “pieces” of the landscape that are not lynx habitat include 43% of the landscape. The Lynx Amendment never provides any analysis or rationale as to why only pieces of the landscape have to be managed for lynx to ensure persistence. There is no analysis in the ROD or Amendment FEIS as to how this fragmented management strategy will work. In addition, the ROD and FEIS do not cite other examples of where this management strategy for pieces of habitat within the overall landscape has been successful in conservation of other wildlife species.

The current best science clearly that lynx use the entire landscape, and not just pieces of the landscape, and that habitat fragmentation will be highly detrimental to lynx persistence. Holbrook et al. (2017a at page 13) reported that 66% of the female lynx home ranges included more than 50% contiguous, dense mature forest habitat. As well, Kosterman et al. (2018, abstract and 1037-38) reported that female lynx home ranges on average contained 49% dense, mature forest; it was also noted that reproductive success in female lynx was highly correlated to this habitat feature in their home range. Kosterman et al. (2018) provided a map and summary of lynx habitat within female core areas (Figure 4), and there are no categories of habitat defined as “non-lynx habitat.” These core areas do include openings and sparse forest, which are still identified as lynx habitat. Holbrook et al. (2017a) and Kosterman et al. (2018) do not have categories of non-lynx habitat in their findings; instead, habitats are classified based on structure; the value to lynx was defined by use levels. Even areas that were avoided by lynx during some seasons, or year-round, were still identified as lynx habitat.

The ESA requires that the current best science be used in conservation measures for threatened and endangered species. There is clearly no basis for the continued use of the Lynx Amendment where lynx habitat is managed in pieces with no lynx protection required in the intervening areas defined as non-lynx habitat. The Lynx Amendment clearly jeopardizes the conservation and persistence of lynx, and needs to be replaced with biologically-meaningful direction for the lynx.

3. The Lynx Amendment is rift with arbitrary standards that appear to be designed to promote vegetation management activities in lynx habitat rather than to promote lynx conservation; examples not previously addressed include the VEG S2 and VEG S5 standards.

The VEG S2 standard does not apply to prescribed burning activities (ROD Attachment 1). Instead, it only applies to openings that are created by logging. The Elk Smith Project BA at 13 notes that this standard does not apply to the Elk Smith Project because it is not a logging project. This standard is designed to limit the amount of early stand initiation lynx habitat per given time; no more than 15% of an LAU can be clearcut within a 10 year period, since these acres will not provide lynx winter habitat for up to 30 or more years. This standard is based on the temporary adverse impact that openings have on hare habitat, and thus lynx. Since the Elk Smith Project is a prescribed burning rather than a logging project, somehow the adverse impact of a large increase in openings is not going to impact hares or lynx. The ROD and FEIS for the Lynx Amendment never defined why the cause of the opening affects it's impact on hares and lynx.

The current level of openings in the RM -25 LAU is unknown, as this information is never provided in Table 3 of the BA at 10. The BA shows that there will be at least 1,873 acres of early stand initiation habitat created by the proposed burning and slashing. The current level of 1,215 acres of early stand initiation habitat represents 11% of purported lynx habitat. When increased to 2991 acres as per Table 3, this would represent 27% of the LAU, or would be a 16% increase in openings within a 10 years period. This project would therefore violate the Lynx Amendment VEG S2 standard if it applied. The total acreage increase in early stand initiation habitat is unknown, as about half of the treatment acres were discounted as lynx habitat.

The VEG S5 standard in the Lynx Amendment is also arbitrary. The requirement that the agency maintains all existing dense regenerating forest stands that provide winter lynx habitat (ROD Attachment 1) has several loopholes that make this standard meaningless. For example, there is no actual minimum level of this key habitat feature for lynx, even though the current best science has identified what this level should be in order to promote reproduction of lynx. Kosterman et al. (2018, abstract, 1037, 1038) reported, based on monitoring 36 female lynx that produced 61 litters, that dense regenerating forest stands within their home range and core areas ranged from 12-20%. This habitat feature, along with the amount of dense, mature older forest, were the most significant factors affecting lynx reproductive success.

The current level of this habitat in mapped lynx habitat in LAU RM-25 is 54%, or 5967 acres. This is only 30% of the landscape of 19,720 acres, however. The BA shows that half of the treated acres in this habitat will be lost, or 1,873 acres. This would reduce this habitat to 4,094 acres, or 37% of lynx habitat, or 21% of the landscape. This is close to the level recommended by Kosterman et al. (2018); however, it will result in an increase of openings far above what is recommended by that publication. Kosterman et al. (2018) reported that female lynx had an average of only 4% openings in their core home ranges, while the Elk Smith Project would increase openings just in lynx habitat from 11% up to 27%, or almost 8 times what promotes lynx conservation.

The Lynx Amendment allows the reduction of key lynx forage habitat in dense regenerating stands because these reductions are claimed to occur in the WUI (542 acres), while 43 acres do not actually qualify as precommercial thinning because the areas will be burned, but not slashed. So the manner in which the dense regenerating stands are eliminated is what supposedly determines if this loss affects lynx, not the actual loss. This is similar to the arbitrary rationale as to why VEG S2 standard applies to logging projects but not prescribed fire projects. As with the VEG S2 standard, there is no analysis provided in the Lynx Amendment ROD as to why the manner in which dense regenerating forest is removed defines the impact on lynx, not the actual loss of this habitat.

As is noted in the project BA at 13, the loss of dense, regenerating forest habitats in lynx habitat can be exempted up to 6% of the entire occupied

acres of lynx habitat across a national forest. For the Lewis and Clark National Forest, this exemption for VEG S5 standard allows 28,561 acres of dense regenerating key lynx habitat to be removed (27,979 acres remaining of the exemption plus the additional exemption acres for the Elk Smith Project of 542 acres). There is no analysis in the Lynx Amendment ROD or FEIS as to what this 6% exemption is based on.

B. The Forest Service will violate the ESA, the NFMA, the NEPA and the APA by proposing to manage the Elk Smith Project Area by the Lynx Amendment, which jeopardizes the persistence of lynx in Montana for over 10 years now without any documentation that the lynx population in Montana is stable or increasing.

1. The EA is a violation of the NEPA and the APA because the agency failed to demonstrate that the proposed removal/reduction of lynx/hare habitat will not have significant impacts on the lynx population in this landscape; given the lack of any population trends of lynx in Montana at present, there is no basis for claiming that the proposed reductions in habitat are not significant within either the project area, surrounding landscape, or Montana if these reductions exacerbate ongoing lynx population declines.

There appears to be very limited information available on lynx population trends in the Northern Rocky Mountains, including Montana and Wyoming, including since the Northern Rockies Lynx Management Direction (hereafter "Lynx Amendment") was implemented. Prior to such implementation, declines were noted in the early 2000s in the Gallatin Range in Montana and in northwestern Montana:

Squires 2007: observations provided by the Wyoming Game and Fish Dept, and results from recent (2000-2001) snowtrack surveys indicated that lynx may have recently declined and are currently quite rare in northwestern Wyoming.

Gehman 2010: the Gallatin Range is historic lynx habitat; lynx were present in 2004-2005 winter, but then surveys could not detect them in later years.

Since the Lynx Amendment was implemented in 2007, the information on lynx population trends that we are aware of include declines in the Seeley Lake area and in the Garnet Mountains:

Squires 2009: preliminary data indicates that lynx in Seeley area may be declining.

Squires 2010, in USDA 2011: in Seeley Lake it appears lynx are decreasing compared to in Purcells on the Kootenai; no females were captured last year; they were more difficult to capture in last 3 years.

Squires, J., pers. Comm. 6/9/15 on BLM field trip to Garnet Mountain Range: lynx have now vanished in this mountain range.

The Elk Smith Project Environmental Assessment (EA) and Biological Assessment do not provide any information on lynx population trends. A Biological Opinion was not provided with this EA, so it remains unknown at this time if the USFWS will provide information on lynx population trends in Montana. Without any data on population trends, the agency has no basis for claiming that the proposed removals/reductions of lynx/hare habitat in the Smith Creek Project Area will not exacerbate a declining lynx population trend across Montana.

2. The agency is violating the NFMA, the NEPA, the APA and the ESA by failing to monitor how the Lynx Amendment is achieving the expected outcome of conserving lynx in Montana and the Northern Rockies.

The monitoring program for the Lynx Amendment is a violation of the NFMA, NEPA, APA, and the ESA because the associated monitoring program for this Forest Plan direction does not actually measure lynx population trends in areas where this direction is being applied. Instead, there is a “proxy” for lynx population trend based on whether or not the 6% exemption acres for lynx habitat loss have been met on a National Forest. On the Lewis and Clark National Forest, the total acres of exceptions

allowed before population impacts on the lynx are predicted is 27,979 acres (Smith Creek Biological Assessment at 13). The Elk Smith Project will require 542 acres of these exceptions. When added to the current acres of exceptions of 43 acres, this brings the total exceptions to date to 585 acres. Since the Lynx Amendment was implemented in 2007, these exemption acres would average 59 acres per year. The proxy for lynx population impacts will thus last for 474 years (27,979 exemption acres allowed divided by 59 exemption acres used per year). This proxy extends many times longer than the average forest planning period of 15 years. In the mean time, the actual impact of the Lynx Amendment on lynx population trends due to the standards are unknown.

Even when the Lynx Amendment was developed, there were no actual scientific assessments by lynx experts as to it's ability to not only conserve lynx, but to increase populations. The Lynx Amendment is based on the Lynx Conservation Assessment and Strategy (LCAS 2000) (Elk Smith Biological Assessment 8). The LCAS took "parts" of a lynx management strategy developed by Brittel et al. 1989. This document was developed long before the extensive new science that has been published on lynx ecology, including up through 2019. The Brittell work is thus outdated by 30 years. As well, one of the key features of Brittell's work included managing lynx habitat on a square-mile basis, so that lynx habitat would be well distributed within a lynx's home range. This criteria was not included in the LCAS. Nor did Brittell include a 6% exemption of lynx habitat.

There was never any scientific analysis by lynx experts to demonstrate that the LCAS was a valid conservation strategy for lynx. Dr. John Squires, a lynx researcher with the Forest Service, noted in his correspondence in the LCAS on 9/27/2002 includes comment number 10: "I strongly suggest you delete the last sentence of point #7. We do not know if the LCAS standards will provide for lynx viability." Dr. Squires also noted in these comments: the few areas that support lynx populations need to be identified and managed accordingly; these actions may be greater than those described in the LCAS; this issue is especially important relative to forest thinning; although the total percentage of thinned acres may be low at the regional scale, the critical issue relative to lynx conservation is the amount of thinned acres in areas that currently support lynx populations.

3. The Lynx Amendment is not a valid management strategy for the threatened lynx because it does not require any

minimum level of hiding cover for lynx, and thus does not address predation.

The Lynx Amendment is being applied to critical habitat in the Smith Creek Project Area, which is occupied lynx habitat. This project involves extensive removal of lynx hiding cover. This is possible because the Lynx Amendment has no standards for hiding cover for lynx, even though predation on lynx is one of the major factors in lynx mortality. Squires et al. 2006 reported that predation was 31% of the total lynx mortality in their study; 14 of 15 predation events were by mountain lions.

The Lynx Amendment allows via VEG S1 that 30% of lynx habitat within an LAU can be openings that do not yet provide winter hare habitat, or dense cover above the snow (Lynx Amendment ROD attachment 1 at 2). This would not actually require 70% hiding cover across an LAU, however, because not all habitats within a LAU are classified as lynx habitat. Non-lynx habitat may be reported to be a significant percentage of the total landscape, as classification of lynx habitat has no specific criteria, most importantly, whether snowshoe hares are present or absent in those habitats. All the agency has to do to classify a forest as nonlynx habitat is to say that these habitats have no snowshoe hares. For the Elk Smith Project, non-lynx habitat within LAU RM-25 is 43% of a total landscape of 19,720 acres (Project Biological Assessment, Table 3 at page 10). This equates to 8572 acres of non-lynx habitat (19,720 total acres minus 11,148 acres of lynx habitat). There are no hiding cover requirements for lynx on these 8572 acres as per the Lynx Amendment, since they are not considered lynx habitat. In effect, the Lynx Amendment requires 70% hiding cover on only 11,148 acres of the LAU, which would be 7804 acres (70% times 11,148 acres = 7804 acres). These 7804 acres would comprise 40% cover on the entire landscape in LAU RM-25.

A 40% level of hiding cover in lynx critical habitat generally required by the Lynx Amendment is not even half of the level of cover that female lynx that are able to produce litters are selecting, or 86%. Kosterman et al. (2018 at 1037) noted that female lynx that produced litters occupied core areas in a landscape relatively dense mature forest levels of 49%; medium-diameter regenerating forests (tree diameter 6-8 inches) were 24%, and small-diameter regenerating forests (tree diameter 4-6 inches) were 13%. As per Table 1 at 1036, both small diameter and medium diameter regenerating

forests provide dense cover, with somewhat more dense cover in the small diameter regenerating forest. Since a minimum average diameter of trees in the small-diameter regenerating forest was 4-6 inches, and 6-8 inches in the medium-diameter regenerating forests, these would be relatively older clearcuts, which would likely also provide winter cover above the snow. Thus hiding cover of female lynx in their core areas for summer and winter was roughly 86%. At a minimum, this 86% of a core area would provide hiding cover in the summer, when predation levels on lynx are highest because the lack of snow allows lions and other predators into higher elevation lynx habitat (Squires et al. 2006).

The Lynx Amendment also could result in even lower levels of hiding cover (only 40%) in lynx core areas, which are 50% of the mean home range of 13,440 acres (Holbrook et al. 2017 at 5, 9). This would be only 6720 contiguous acres of an LAU. It is easily possible that within an average LAU, which could be the size of RM-25 of 19,720 acres, a lynx's core area could be heavily logged while the LAU still meet the 30% standard of young clearcuts, as there are no requirements as per distribution of these young clearcuts. If 30% of the lynx habitat in this LAU were in young clearcuts without substantial cover for lynx or hares, this would be 3344 acres, or almost half of a 6720 lynx core area. This number could even go lower given that the Lynx Amendment allows an additional 6% of lynx habitat loss due to the exemption. In fact, there is no requirement that the Forest exemption has to be spread across any specific number of LAUs. The exemptions could instead be concentrated within just a few LAUs, including within lynx core areas and within key areas that have productive lynx populations. In this respect, as was noted by Dr. Squires, the management direction initiated in the LCAS, and continued in the Lynx Amendment, treats all occupied lynx habitat as equal, regardless of current population hot spots.

4. The Lynx Amendment is a violation of the NEPA, the NFMA, the APA and the ESA because it lacks any meaningful criteria for the identification of lynx habitat that is to receive special protections and management; agencies can arbitrarily map lynx habitat without any on-the-ground information on the presence or absence of snowshoe hares, either now or in the future, which promotes under-reporting of project impacts on lynx.

a. The Lynx Amendment allows an arbitrary exclusion of forest habitats as lynx habitat, and thus areas which have no restrictions for logging, without requiring any actual documentation that the non-lynx habitat designations in fact have no snowshoe hares.

As noted previously, the LAU RM-25 in the Elk Smith Project Area has 43% of the landscape identified as non-lynx habitat. However, the EA and BA do not provide any actual snowshoe hare monitoring that was used to claim no hares exist in 43% of the landscape. We are not aware of monitoring data on the Lewis and Clark National Forest, or in published research, that demonstrates that hares are either “present” or “absent” on the landscape. Instead, monitoring data shows a wide variation in hare densities across the landscape and across patches. For example, Squires and Ruggiero 2007 at page 313 reported research where summer hare densities were 0.34/ha in dense mature forest, 0.18/ha in mature open forests, 0.64/ha in young dense forests, and 0.18/ha in young open forests. In the winter, hare densities were reported at 0.53/ha in mature dense forest, 0.2/ha in mature, open forests, 0.47 in young dense forests, and 0.12/ha in young open forests. In Holbrook et al. (2017a at 7, hare densities ranged in occupied areas from 0.28, 0.81, 1.48, and 4.21 hares per hectare; the average was 1.01 hares per hectare. Thus the Forest Service practice of mapping lynx habitat based on the “assumed” presence or absence of snowshoe hares is inconsistent with the current best science, and is not based on agency monitoring. Holbrook et al. (2017a at 7) reported that 67% of their survey plots in lynx habitat of northwestern Montana contained snowshoe hares. This is much higher than the 5,967 acres of stand initiation forest and 1220 acres of multi-storied older forest habitat that occurs in RM-25 (Table 3 of Project BA at page 10). This equates to 7,187 acres of hare habitat in this lynx landscape, which is only 36% of the landscape.

b. The Lynx Amendment uses simplistic habitat categories that misrepresent the dynamic nature of ecosystems, including their values to lynx and hares.

Undoubtedly, some dry forests at lower elevations, as is suggested in the Lynx Amendment mapping direction, may not always contain many or no hares due to a lack of hiding cover. However, research has demonstrated that hare habitat is dynamic over time, including after fires. Vanbianchi et al. 2017 noted that in Washington, lynx switched from habitat use of moist

forests to dry forest sites after the fire because this was where the best cover was for hares; regeneration in normally-preferred habitats of spruce and fir had much less regeneration immediately after the burn; it was concluded that forest cover types were not highly predictive of lynx use in the burned area; anything that offered cover was used; also in the Whiteface Burn, lynx selected for the normally-avoided dry forest and against spruce-fir forests; this switch in use of forest types was based in part on the large amounts of willow and alder mixed with Douglas fir and ponderosa pine trees in the regenerating dry forest; the densely growing deciduous species provide thick understory cover for hares and lynx; by selecting the dry forests lynx usually avoid, lynx demonstrated the importance of thick understory structure over forest type.

This problem with the Lynx Amendment relates directly to the Elk Smith Project. The lower elevation dry forests in LAU RM-25 have been classified as non-lynx habitat as per the lynx habitat map. Yet these areas, especially all of units 1, 9 and 11, are going to have slash-burn treatments to reduce fuels created by dense young lodgepole pine stands. How can these areas be providing good hare habitat while not mapped as lynx habitat? How can they have high fuel loads 25-30 years after a fire and still not be providing hare habitat? It is not just units 1, 9 and 11 that are a concern in regards to mapping lynx habitat after a fire. Table 3 of the project BA at page 10 shows there are 5,088 acres of lynx habitat included within treatment units, although there is a total of 10,331 acres proposed for treatment. Thus almost half of the treatment acres are not classified as lynx habitat, even though they have dense habitats that are a fuels risk. It seems likely that this half of proposed burning units have been arbitrarily classified as non-lynx habitat simply to avoid including them as a habitat loss from this project. This misrepresentation of project impacts on lynx due to mapping procedures is not prohibited by the Lynx Amendment.

Even the exclusion of lower elevation openings as lynx habitat, areas that can thus be “treated,” can be problematic for management of lynx habitat. These areas may provide alternative prey sources for lynx intermittently over time, which means they would promote lynx persistence during those periods. For example, the LCAS at 2-20 noted that 30 lynx were harvested in a short period in the late 1990s in a sagebrush landscape where there was a high population of jackrabbits. Hence burning of conifers and brush in these open areas could directly reduce/eliminate a food resource for lynx.

c. The lack of any specific mapping criteria based on science and monitoring in the Lynx Amendment means that agencies can define lynx habitat incorrectly; by excluding valuable habitat for lynx in the mapping process, the agency can proceed with vegetation treatments without restrictions required in lynx habitat.

There are a number of examples of “arbitrary” mapping and designation of lynx habitat in the Elk Smith Project that can be attributed to the value criteria in the Lynx Amendment that do not require any site-specific documentation. For example, mapped lynx habitat identified as “stem exclusion” and “other habitat” in Table 3, BA at 10, supposedly do not have snowshoe hares present. So why are they mapped as lynx habitat? The Lynx Amendment suggests that dry forest types are not lynx habitat because they lack snowshoe hares. So how can stem exclusion and “other” habitats be classified as lynx habitat if they also have no snowshoe hares?

Second, some acres of “other” habitat are classified as lynx habitat in the Elk Smith Project, while other acres of this type are excluded as lynx habitat. Table 3 of the BA at 10 shows 2,746 acres of stem exclusion and other habitat in the LAU that are lynx habitat. The breakdown of these 2 categories are not provided. Nor are specific definitions provided for either in Table 3. What is unclear is what specific criteria are being applied to divide “other” habitats into either lynx or non-lynx habitat. The lynx habitat map in the EA and BA shows extensive areas of “other” habitat in the project area. These “other” acres would include most, if not all, of the total 8,572 acres of non-lynx habitat in this LAU. Table 3 shows the LAU has 19,720 acres, but only 11,148 acres are lynx habitat. This leaves 8,572 acres of “other” habitats. How can some of these “other” habitats have hares, while some do not? And how was this determined for this landscape?

The third problem with the Lynx Amendment mapping in the Elk Smith Project has been partly discussed previously. If areas burned 25-30 years ago in the fire have dense lodgepole pine regeneration, how can these areas be classified as non-lynx habitat? These older stands of dense regeneration are prime summer habitat for hares. This concern relates particularly to units 1, 9 and 11, where trees are going to be slashed prior to burning. Yet these units are located entirely in “other” habitat which is non-lynx habitat, as per the lynx habitat map. It seems that these areas have been intentionally classified as non-lynx habitat in order conceal and reduce reported project impacts on lynx and hares.

Our concern that the exclusion of many areas in the RM-25 LAU as lynx habitat has been invalid, and designed to avoid proactive management of this threatened species, is supported by the estimates of hare habitat the agency reports on this landscape. It seems that the areas of LAU RM-25 that contain snowshoe hares, as reported in the project BA at Table 3, page 10, is very low as compared to published surveys, which would indicate that lynx mapping in this LAU is biased against lynx protection. Within this LAU, stand initiation and multistory habitat would have hares, which come to 5967 and 1220 acres. These 7187 acres represent 36% of the 19,720 acre LAU. Holbrook et al. (2017a at 7) monitored the presence of hares across a wide spectrum of northwestern Montana, and reported that 67% of the habitats they sampled contained hares.

d. The Lynx Amendment allows arbitrary removal of portions of the landscape occupied by lynx, including critical habitat, if habitat density is reported to be “insufficient” for consistent lynx use; the scientific basis for “insufficient” habitat has not been provided in the Lynx Amendment or LCAS, however.

The Elk Smith BA notes at pages 8-9 that “portions of the Rocky Mountain Ranger District, including the north-eastern portions of the project area, were not included within mapped Lynx Analysis Units because they do not contain sufficient potential lynx habitat to be used consistently by lynx. The scientific criteria for excluding some areas on this basis was never provided in the BA or EA. No information was provided, as well, as to what density and percentage of the landscape of suitable lynx habitat (contains snowshoe hares) is required before it can be mapped as lynx habitat. The LCAS states at page 7-4 that at least 10 square miles of “primary vegetation” for lynx should be present within LAUs. If this were an actual criteria, which it is not, in the Lynx Amendment or LCAS, then LAUs could simply be expanded to increase known lynx habitat, instead of deleting portions from an LAU. Deleting portions of the landscape to be managed for lynx should at a minimum be based on an actual analysis of not only the potential value of areas for alternate prey species at certain periods over time, or how important such areas are to ensure relative contiguous forest habitat required by lynx. Removing pieces of the landscape from lynx management will also result in extensive fragmentation of their habitat, which means that even if some interspersed areas have no snowshoe hares, these interspersed areas

will still provide hiding cover for lynx travel, and thus reduce the risk of predation.

5. The project will create significant, potentially permanent adverse impacts on lynx and lynx critical habitat, in violation of the ESA; the project requires completion of an environmental impact statement.

The project will slash trees up to 16 feet in height prior to burning in many areas, plus just burn in many other areas. These burns will create openings up to 100 acres in size across the 19,720 acre project area, although it is not clear how the size of openings will be controlled. These openings are not mapped for the project. The percentage of openings in what has been identified as “lynx habitat” will increase from 1215 acres to at least 3088 acres in the LAU RM-25 (Table 3 in the BA shows an increase to 2991 acres, but how this was derived is unknown). Given that lynx habitat is purported to be 11,148 acres of this LAU, this will increase open, unsuitable habitat for lynx from 11% to 28%, or as per Table 3, an increase to 27%. It is actually impossible to determine how many acres of openings will be created with this project as per Table 3, however. There are 420 other acres of lynx habitat that will be burned, since the total identified treatment of lynx habitat is stated to be 2,545 in the BA at 12. It is unclear how burning will affect openings on these 420 acres, as no information is provided in the BA on this impact. However, it does appear that the impact of new created openings will be higher than reported in the BA.

Contrary to what is claimed in the Elk Smith BA at page 12, hares are not expected to begin using new burned areas within 3 years. There was no citation for this claim. We believe this is a severe misrepresentation of the impact of the proposed burning, including in patches up to 100 acres across the LAU. The average home range size for hares is estimated at 12.5 acres (McKelvey and McDaniel 2001 at 16) up to 25 acres (Griffin 2004 at page 78). There was no information ever provided as to why openings up to 100 acres are planned across this critical lynx habitat in regards to management of snowshoe hares. Burning of 1873 acres of winter hare habitat provided in dense regeneration areas of lodgepole pine will eliminate from 75 to 150 home ranges of hares (1873 treatment acres divided by 12.5 or 25 acres for hare home ranges).

The loss and/or low use of hare habitat in recently-disturbed forest habitat will last for at least 10 years as per current science (e.g., Holbrook et al. 2018, abstract, at 117; page 122 where it is noted that lynx strongly avoid stand initiation forest, and particularly in the winter). The time period for development of good hare habitat, including winter habitat, after forest disturbance has been defined by Holbrook et al. (2018 at 117) as stand initiation lasting about 0-8 years after disturbance, sparse forest lasting about 9-25 years after disturbance, and advanced regenerating forests, lasting for 25-40 years; the latter phase is the only one identified as having dense horizontal and vertical cover. The characteristics of advanced regenerating forests were defined by Kosterman et al. (2018 at 1036, Table 1) as small-diameter regenerating forests with diameters of trees from 4-6 inches dbh, and medium-diameter regenerating forests with tree diameters ranging from 6-8 inches. The time period for these larger sapling/immature trees to develop varies by sites. Holbrook et al. (2018) reported that stand initiation phases will last for up to 8 years, and sparse forests will last for 9-25 years; it took 34-40 years after disturbance for stand initiation areas to reach 50% of cumulative use by lynx in both summer and winter. Thus there is a relatively significant cost for lynx with forest removals, a cost that extends for far longer than 3 years, as is claimed in the Elk Smith BA at 12.

Holbrook et al. (2017a at 12) reported that stand initiation habitat was the least used habitat for lynx across seasons and was avoided in the winter; sparse habitats were also avoided in the winter. Holbrook et al. (2017b at 2) reported that open habitats are bad for hares due to the high predation that occurs in these areas lacking cover; they noted that hares need dense cover to survive. They noted that occupancy of habitat by hares increased 20% for ever 10% increase in cover (Id. at 7).

Kosterman et al. (2018 at 1037) reported that core areas of female lynx that produced litters had only 4% openings.

McDaniel et al. (2004) reported that on the Targhee National Forest in Idaho, hares selected dense cover all season, but like dense stands with small openings; hare avoided open areas in the winter.

Studies on burned forest habitat provide results similar to those more recently reported by Holbrook et al. 2017a, Holbrook et al. 2017b, and Holbrook et al. 2018. Cheng et al. (2015) reported that in Glacier National

park, there were no hares in recent burns (11 years since burning); even in the 17-year old burns, 17% of the study plots lacked any hares. This was because older regenerating stands had a high variability in the density of trees; areas with the most dense trees had the highest density of hares. Chenge et al. (2015 at 131) cited other studies where high hare densities in regenerating forest stands did not develop for 20 up to 67 years after disturbance. In Wyoming, Berg et al. (2012) reported that on the Bridger-Teton National Forest, the most hares occurred in stands 30-70 years post-fire.

The creation of an undisclosed number of openings up to 100 acres in size in lynx habitat and in the landscape occupied by lynx will not only directly reduce the key prey species for lynx, but this will have undisclosed and unmeasured impacts on hares due to habitat fragmentation. Lewis et al. (2010) (also cited in Holbrook et al. 2017b at page 2) reported that there is a negative relationship of hare densities and the amount of open patches; habitat fragmentation can separate and reduce hare populations; open areas will be used by hares to access the landscape surrounding their focal areas, and this means they will be exposed to high predation rates when they cross these areas of low cover. Thus even if some of the dense regenerating forests are maintained in the large treatment areas in the Elk Smith Project, this does not demonstrate that the effective habitat loss is only 50%; effective habitat losses will clearly be higher due to fragmentation effects and the resulting increase in predation in open areas.

6. The removal of good winter hare habitat will significantly degrade critical lynx habitat, and such degradation may be permanent; this degradation is allowed by the Lynx Amendment, in violation of the ESA and the NFMA; the agency has no actual data to support how much high quality regenerating habitat will actually be removed in this project; this data could have been obtained through field inventory.

The Lynx Amendment does not require any given level of older regenerating forest, or stand initiation habitat that produces the highest hare densities in the summer of all lynx habitats. The percentage of this stand initiation habitat, which has developed 30 years after the 1988 fire, is 5967 acres of 11,148 acres of lynx habitat, or 53.5%. The project will remove at least 1873

acres of this important habitat, and reduce it to 4,094 acres, or 37% of lynx habitat. This is the direct loss of regenerating forest. Given that the heavy fragmentation of these areas with openings up to 100 acres in size, the impact on hares will clearly be much greater, due to increased predation in the intervening large openings. Good unfragmented regenerating forest habitat may be reduced to only 2222 acres (5967 – 3745 acres, Table 3 at BA 10), which would be 20% of the lynx habitat. This likely loss of more than half of the existing high quality hare habitat in this critical lynx habitat does not violate the Lynx Amendment direction.

A factor that is never addressed in the Elk Smith project in regards to lynx is the likelihood that the best, most dense patches of lodgepole pine in the proposed burning and slashing/burning units will be targeted for treatment. It is unknown how many acres of this high-quality hare habitat exists in the 5,967 acres of regenerating forest claimed for this project (Table 3, BA at 10). As was noted by Cheng et al. (2015, Abstract) where they monitored hare densities in older fires in Glacier National Park, the majority of regenerating forest plots actually lacked hares: hare densities in these burned areas were highly variable, but was strongly related to densities of regenerating lodgepole pine; still, hare densities in regenerating lodgepole pine were 10 to 20 times higher than in other sites. In Idaho, McDaniel et al (2004) noted that high density patches of lodgepole pine that were so key to hares, or stands with at least 9,240 stems per acre, were selected all seasons by hare, but comprised only 14% of older regenerating stands. This is similar to the low percentage of dense lodgepole pine stands reported by Cheng et al. (2015) in burned forests of Glacier National Park. So if the most dense patches of regenerating lodgepole pine are being targeted for removal in the Elk Smith Project, the overall impact on lynx/hares will be much higher than claimed by the agency.

The agency does not actually provide any inventory data to demonstrate specifically what percentage of older, dense regenerating habitat will be removed in this project. These areas are not mapped in this critical lynx habitat. As such, the information provided in Table 3 of the BA, page 10, is mere speculation. There is no mapping of the areas of dense regenerating lodgepole pine in all of the 10,331 acres proposed for treatment, including in lynx critical habitat. This means that the EA is invalid, as the claims being provided are never supported with any actual data.

The Elk Smith project is also targeting cutting down trees that are up to 16 feet tall (Project BA at 11). This will limit the availability of taller trees in the winter that are essential to hares when snow gets deeper and cover the shorter trees up (McDaniel et al. 2004); that study reported that hares need a diversity of regenerating stands to deal with varying snow depths over the winter.

7. The Lynx Amendment allows 30% of lynx habitat within an LAU to be unsuitable lynx/hare habitat, which exceeds the amount found in current research for lynx that produce litters; although this standard was based on a 1989 recommendation by Brittell et al. (1989), or 29 years ago, it continues to be used to promote conservation of lynx, including within critical habitat; there is no doubt, based on current science, that this standard jeopardizes the persistence of lynx in Montana and the Northern Rockies, and is a violation of the ESA.

Standard VEG S1 of the Lynx Amendment limits the amount of early stand initiation forests, or unsuitable lynx/hare habitat, to no more than 30% of lynx habitat in an LAU. The current level of this habitat in RM-25 is reported to be 11% (Table 3, BA at 10). The proposed slashing/burning of 1873 acres of stand initiation forests would bring this up to 2,991 acres (BA at 13; Table 3 BA 10). This would be 27% of lynx habitat within this LAU, which complies with the Lynx Amendment, and as such, is provided as support to show this project will not create significant adverse impacts on lynx, and as well, complies with the ESA.

This 30% standard is extremely inconsistent with the current best science. As noted by Kosterman, only 4% of lynx core areas where females produced kittens had open habitat. Research by Holbrook et al. 2017a, Holbrook et al. 2017b, and Holbrook et al. 2018 all demonstrate that open areas are avoided by lynx. In addition to the problem that open areas create for a lack of lynx foraging habitat, especially in the winter, these open areas mean that important lynx habitat will have to be reduced. The most definitive factor in lynx persistence includes abundant mature, dense contiguous forest habitat. The more open areas that occur in lynx habitat, there is less acreage that can be maintained as this dense, contiguous forest essential to lynx. Kosterman (2014) reported that on average, female lynx that produced kittens occupied

core home ranges with at least 50% contiguous dense mature forest. Holbrook et al. (2017 a at 13) reported that 66% of the female lynx home ranges contained over 50% mature forest, demonstrating that female lynx occupy home ranges of mostly mature forest during the winter; this article, among others, also noted that lynx avoided early stand initiation forest in the winter.

In addition to the loss of foraging habitat for lynx, including in the critical winter period, of 30% of their home range, the Lynx Amendment does not address how the barrier effect of openings affects the ability of lynx to utilize and move through their home range, or to avoid predation during movements through open areas. The use of this 30% standard has drastic adverse implications for lynx management. Application of this standard across all occupied lynx habitat in Montana clearly jeopardizes lynx persistence, in violation of the ESA, NEPA and the NFMA.

VEG S1 is not only highly inconsistent with the current best science for lynx, but it can be easily be met simply by excluding many acres of what may be lynx habitat. Any acres of non-lynx habitat are not covered by VEG S1, and could be burned or clearcut. In RM-25, this equates to 43% of the LAU (Table 3 of the BA at 10). Technically, the Lynx Amendment thus would allow 30% in lynx habitat plus 43% in non-lynx habitat to be nonforested openings at any given time, or 73%. As was noted previously, the Forest Service does not have to validate in any manner that areas mapped as non-lynx habitat never provide lynx/hare habitat at any time. Even if the 43% acreage mapped as non-lynx habitat in the LAU RM-25 actually did not contain hares, this habitat would still be important for lynx travel to provide hiding cover to reduce predation. As noted previously, the Lynx Amendment has no standards to maintain any given level of hiding cover for lynx. And as for the Elk Smith Project, it seems that in fact, many of the acres claimed to be non-lynx habitat are in fact lynx habitat, as they contain dense stands of regenerating lodgepole pine that have been identified as a fire risk that need to be removed.

8. The Lynx Amendment arbitrarily limits the application of VEG S2 standard to timber management projects, and does not apply to prescribed burning projects; there is no analysis in the Lynx Amendment FEIS, ROD, or the BiOp for this amendment, that defines why the rate of creation of openings

(no more than 15% created in 10 years) will have adverse impacts on lynx if these openings are created by logging, but will have no adverse impacts on lynx if these openings are created by slashing/burning lynx habitat.

The Elk Smith project does not require adherence to the Lynx Amendment VEG S2 because this standard only applied to timber management activities. The Project BA at 13 notes that this standard is not applicable to the Elk Smith Project. The basis for determinations that the level of openings created in a 10-year period need to be limited in lynx habitat if these openings are created by logging, but not by slashing/burning, remains unknown.

9. The Lynx Amendment has no direction for burning young regenerating forests which lack the high density of saplings for hare/lynx habitat.

Many acres of the proposed burning include burning of early stand initiation habitat that is not considered winter hare habitat at present, due to a low density of saplings and cover. The perpetuation of these early seral open habitats has no management direction in the Lynx Amendment. There is an impact in that the development of dense regenerating stands that will provide winter hare habitat will be postponed for many decades.

is does not mean that such densities can't develop at some future date. Cheng et al. (2015 at 131) noted that some research has reported that high hare densities may occur in stands up to 67 years after burning. Thus the future development of high quality hare habitat in these more open stands is ignored in the Lynx Amendment, even though the eventual development of this denser habitat is a key factor in lynx habitat quality.

Cheng et al. (2015) stated that there may be a threshold level of open areas lacking dense regeneration, and thus hares, which lynx may no longer be able to persist, due to insufficient area of high quality regeneration and poor or isolated mature stands to act as reservoirs. The Lynx Amendment standards purport to control the amount of unsuitable (low cover) areas in lynx habitat at any one time. Both VEG S1 standard (no more than 30% unsuitable lynx habitat per LAU at any one time), and VEG S2 (no more than 15% unsuitable lynx habitat created within 10 years) were developed to prevent excessive levels of unsuitable lynx habitat at any given time.

However, VEG S2 only applies to logging projects. So while the Lynx Amendment addresses large, relatively abrupt losses of hare habitat that could be created from logging, it ignores the impact of prescribed burning that perpetuates the longevity of unsuitable habitat. This adverse impact to lynx has never been addressed in the Lynx Amendment FEIS.

C. The agency is violating the standard ALL S1 for the Elk Smith Project Area, which triggers violations of the NFMA, the NEPA, the ESA and the APA.

The Lynx Amendment ROD at attachment 1-1 defines standard ALL S1 as: new or expanded permanent developments and vegetation management projects must maintain habitat connectivity in an LAU and/or linkage areas. The glossary of the Lynx Amendment ROD defines vegetation management projects as vegetation management changes the composition and structure of vegetation to meet specific objectives, using such means as prescribed fire or timber harvest.

The prescribed burning is being designed to create openings from 50-100 acres across LAU RM-25. As is noted in the response to comments in the EA, this program is designed to treat 23j-24% of the Elk Smith and Upper Smith Creek drainages. The LAU RMK-25 includes 19,720 acres (Project BA at 10, Table 3). The project would treat up to half of the 10,331 acres located within treatment units. Thus the creation of 50-100 acre openings will include approximately 5,166 acres within the LAU. This would result in the creation of travel barriers/impediments on 26% of this LAU (5,166 divided by 19,720 acres of the LAU). However, there are already at least 1,220 acres of openings, or early stand initiation forest as per Table 3. This is likely a very low estimate, and it includes only areas identified as lynx habitat, and not open acres across the entire LAU. This would bring the minimum total openings, and hence travel barriers/impediments, up to at least 6,386 acres, which would be 32% of the LAU. This means that the project will create travel barriers/impediments for lynx on approximately a third of the LAU landscape.

As per the current best science, travel barriers/impediments on a third of the landscape occupied by lynx would be a significant adverse impact on habitat connectivity. Kosterman et al. (2018) identified the level of habitat connectivity that occurs in female lynx home ranges where reproduction was

successful. They reported at page 1037 that within the core areas of a lynx home range, only 4% included open areas, and only 10% included sparse forest. These habitat features have been identified in this paper, as well as in Holbrook et al. (2017a) as being avoided by lynx. Holbrook et al. (2017a) in Table 2 at page 7 defined the conditions in open and sparse forests that are avoided by lynx:

Open forests: vegetation conditions up to 10 years after disturbance; only 8% canopy cover.

Sparse forest; vegetation conditions from 10-20 years after disturbance; canopy cover average of 28%; average tree height 34 feet; average basal area of 40 square feet.

Holbrook et al. (2017a at 11, 12, and 13) noted that both open and sparse forest conditions were avoided by lynx, especially in the winter.

The Lynx Amendment standard ALL S1, based on the current best science, would require a habitat connectivity level of at least 86% as per Kosterman et al. (2018). The Elk Smith project will only maintain habitat connectivity at best at 68%, given that at least 32% of the LAU will be fragmented with lynx travel barriers/impediments of sparse and open forests. One legal violation of the Lynx Amendment is that it fails to provide any criteria as to what constitutes “habitat connectivity” in lynx habitat. Thus the definition of habitat connectivity is ambiguous, and cannot be violated. The Elk Smith project provides a good example of this unmeasurable standard. The project BA simply states that habitat connectivity will be maintained, without providing any supporting analysis. The lack of any criteria for Standard ALL S1 is a violation of the NEPA, the NFMA and the ESA.

This Forest Plan violation, without the completion of a Forest Plan Amendment, means that the project may have significant adverse impacts on the lynx. In addition, since this is lynx critical habitat, a Forest Plan violation means that the project will create adverse impacts on the lynx. A NEPA violation is triggered because an EIS is not being completed in response to significant environmental impacts. And an ESA violation is triggered because the project will create adverse impacts on lynx critical habitat, as well as add to adverse cumulative impacts on the Montana lynx population by creating adverse fragmentation impacts on lynx habitat across Montana due to the failure of the Lynx Amendment to define any criteria for what is

needed to ensure effective habitat connectivity in lynx habitat, including critical habitat.

D. The Elk Smith Project failed to evaluate and make a determination of site-specific impacts of the project on the wolverine in the BA and draft Decision Notice, as well as failed to identify that this project will have adverse impacts on the wolverine; the agency also failed to use the current best science, or existing science, to evaluate project impacts on the proposed wolverine; these actions trigger violations of the ESA, the NEPA and the NFMA.

There was no determination of project impacts on the wolverine in the Elk Smith EA or BA, as is required by the ESA. Also, there is important monitoring information on the wolverine that was produced on the Helena National Forest that was not cited in the EA or BA. This monitoring data by Gehman et al. (2014) demonstrates the importance of low elevation habitat to wolverine. The information produced by the Rocky Mountain Forest and Range Experiment Station (1994) was also not used in the project assessment on wolverine. This document provides extensive documentation that big game winter range as well as snowshoe hares are important forage resources for wolverine (e.g., Table 5 at 112). The project includes extensive prescribed burning and slashing of big game winter range. No analysis was ever provided to demonstrate that these treatments will maintain the current carrying capacity of these winter ranges for elk and deer. If the winter carrying capacity is going to be reduced for elk and deer, due to a removal of hiding and thermal cover, as well as forage provided by trees and shrubs, this will in turn mean that carrion for wolverine in the winter will also be reduced. The vital connection between wintering big game animals and wolverine persistence in the winter was never identified in the Elk Smith analysis, which means the analysis of project impacts are invalid, including a determination of no significant impacts on resources.

In addition, as we noted previously, this project will create a huge decrease in the population levels of snowshoe hares. This is an important prey species for wolverine (USDA 1994, Table 5 at 112; also text at 111). So again, an

adverse impact on wolverine that will be created by this project was never identified by the agency in their analysis or determination of the level of significant impacts.

The addition of this issue on wolverine is new with respect to NEC and AWR's comments on the preliminary analysis for the Elk Smith Project. However, we had only recently become aware that the wolverine was not evaluated in the Project BA after this document was provided once the draft Decision Notice was released. As such, we could not have raised this issue previously in our comments. In addition, we have only recently become aware that Region 1 of the Forest Service has a policy of not including the wolverine in site-specific Biological Assessments, instead relying on a Region 1 programmatic BA for the wolverine. This 2014 programmatic BA did not include the monitoring data by Gehman et al. (2014) that demonstrates the high importance of low elevation habitat for the wolverine. In addition, this programmatic BA did not identify the key importance of big game winter ranges to wolverine. As such, this programmatic BA would not be a valid assessment of vegetation management impacts on this proposed species.

E. The agency is violating administrative direction for the Roadless Area Conservation Rule by implementing management intervention activities that are not supported with any science; the extensive activities to be completed in this Inventories Roadless Area at a minimum would require an EIS, which was not completed; this EIS is also required due to the extensive adverse impacts that will be triggered on wilderness species, including the threatened Canada lynx, the threatened grizzly bear, and the proposed wolverine, all species that are currently using this roadless landscape in part due to its natural, undisturbed character; finally, the agency failed to identify that the proposed prescribe burning/slashing will have significant adverse impacts on existing forest habitat, including a likely

regeneration failure and the drying out of the landscape; the economic impact on irrigators was never addressed.

The Roadless Area Conservation Rule limits management interventions to actions that are needed to restore ecological characteristics of the IRA. However, the Elk Smith Project only identifies one factor that supposedly needs intervention for restoration. The BA at 7 states that there is an overabundance of dense stands of dense, even-aged young stands of lodgepole pine. However, no science or criteria were ever provided as to why the level of these regenerating stands of lodgepole pine are “unnatural.” As per Table 3 of the Project BA, these dense stands of lodgepole pine currently comprise 5,967 acres within the LAU, which is 30% of the landscape. Since many areas outside of mapped lynx habitat will also be treated, the percentage of dense, regenerating lodgepole pine stands would also need to be tallied for the entire LAU. This information was never provided. The agency has failed to provide any science to indicate that the current level of dense regenerating lodgepole pine stands are unnatural. The agency also failed to identify what the “natural” level of this habitat is considered to be, which would thus be the objective of this treatment. There is actually no objective for this habitat ever defined for the project.

Dense regenerating stands of lodgepole pine are known to be a natural impact of fires, as has been noted by Cheng et al. (2015) for Glacier National Park, and by Berg et al. (2012) south of Yellowstone National Park on the Bridger-Teton National Forest. These articles also noted that these high density regeneration areas are highly variable across a burned forest, and as well, that these areas provide high densities of snowshoe hares, important prey for both lynx and the wolverine. The science demonstrates that these dense stands of regeneration provide key, limited habitat for wildlife. If anything, these important ecological features of burned forests need to be protected, not destroyed via management intervention.

Overall, the proposed project is simply a fuels management project, which has not been demonstrated as necessary to restore the ecological characteristics of this IRA, in violation of the Roadless Area Conservation Rule.

There are two additional severe adverse impacts of the proposed “restoration” of this IRA that were not identified in the Elk Smith analysis. The first is the significant probability that many of the areas to be burned may not regenerate again into forests due to the absence of conifer seed sources, including serotinous cones of lodgepole pine, and the distance of, and limitation of remaining mature forests that would provide a seed source to newly burned areas. Restoration of IRAs clearly does not include deforestation. The agency never provided any rationale as to why areas that were previously forest should be removed to restore this ecosystem.

The second issue that was not addressed except in response to comments was that the prescribed burning will result in a drying out of the landscape due to the removal of shade provided by forests. This removal of shade will increase early snow melt, and increase early drying out of vegetation in the summer season. These impacts were extensively addressed by the Fort Shaw Irrigation District (identified in response to comments beginning at 242).

Page 242: The Fort Shaw Irrigation District (FSID) adamantly opposes the Forest Service’s Elk Smith Project at this time until several items of interest that affect the wellbeing of the FSID water users can be resolved....the project does not take into consideration the major economic benefit agriculture has to the entire Sun River Watershed.

Page 243: as part of the consultation with other government agencies in the Sun River Watershed, the Forest Service never consulted with the FSID or any other agriculture group on how a project of this magnitude would impact water supply for FSID and its water users over the long term...

Page 243: in the soil and water section FSID could not find anywhere there was a review of possible long-term impacts to water supply for agriculture use which is a key economic benefit to this region.

Page 244: AS FSID reviews the entire document, there is no mention of agriculture benefits or impacts which is just as important as wildlife, fisheries, aesthetics, plant diversity, or any other benefit mentioned in the plan.

Page 245: The timing of water runoff from the watershed impacts the ability of irrigation districts to store and utilize water in accordance with their water rights; premature or accelerated runoff results in a significant loss of water with respect to irrigation as reservoirs quickly fill and spill before the irrigation season peaks; the practice of deforestation and loss of forest canopy results in premature and accelerated runoff events as the exposed snow pack is subjected to increased radiant and convective heating which promotes warming and "ripening" of the snow pack thus promoting and accelerating runoff; the result is a net loss of water that we have historically used under our water right; the Elk Smith project preliminary analysis document fails to adequately predict and quantify the long-term environmental and economic impacts of the proposed burns will have by causing premature and accelerated runoff patterns.

The agency claims that the reduction of mid-summer water resources to irrigators will not be significant because of the acreage planned for burning. Still, this issue is clearly "controversial," which means that the Forest Service is required to complete a more thorough analysis of the impact of the project on the timing of water yield releases for irrigators. This additional analysis is also required to address how this impact on moisture conditions in this IRA will impact reforestation. This analysis also needs to include how the removal of up to 60% of the coarse woody debris in burn units will impact forest regeneration over time, due to the removal of shade, and the loss of moisture reserves, that are provided by large downed logs.

F. NEC and AWR are incorporating by reference all the issues identified in our comments on the Preliminary Analysis for the Elk Smith Project, including grizzly bears and hiding cover, in order to save repetition.

Literature cited:

The references cited in this Objection are provided in Appendices A and B.