

Data Submitted (UTC 11): 7/14/2022 6:00:00 AM

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Comments: July 14, 2022

Ken Coffin, District Ranger

Custer Gallatin National Forest

Beartooth Ranger District

6811 US Highway 212

Red Lodge, MT 59068

RE: Scoping comments on the proposed Red Lodge Mountain Fuels Project

Dear Ranger Coffin,

Please accept these comments on the scoping notice for the proposed Red Lodge Mountain Fuels Project July 14, 2022 Ken Coffin, District Ranger Custer Gallatin National Forest Beartooth Ranger District RE: Scoping comments on the proposed Red Lodge Mountain Fuels Project Dear Ranger Coffin, Please accept these comments on the scoping notice for the proposed Red Lodge Mountain Fuels Project from me on behalf of the Alliance for the Wild Rockies, Yellowstone to Uintas Connection, and Montana Ecosystems Defense Council, and Native Ecosystems Council. We will refer to this group as (Alliance). The Forest Service must complete a full environmental impact statement (EIS) for this Project because the scope of the Project will likely have a significant individual and cumulative impact on the environment. Alliance has reviewed the statutory and regulatory requirements governing National Forest Management projects, as well as the relevant case law, and compiled a check-list of issues that must be included in the EIS for the Project in order for the Forest Service's analysis to comply with the law. Following the list of necessary elements, Alliance has also included a general narrative discussion on possible impacts of the Project, with accompanying citations to the relevant scientific literature. These references should be disclosed and discussed in the EIS for the Project.

I. NECESSARY ELEMENTS FOR PROJECT EIS:

A. Disclose all Custer Gallatin National Forest Plan requirements for logging/burning projects and explain how the Project complies with them;

B. Will this project comply with forest plan big game hiding cover standards?

C. Disclose the acreages of past, current, and reasonably foreseeable logging, grazing, and road building activities within the Project area;

D. Solicit and disclose comments from the Montana Department of Fish, Wildlife, and Parks regarding the impact of the Project on wildlife habitat;

E. Solicit and disclose comments from the Montana Department of Environmental Quality regarding the impact of the Project on water quality;

F. Disclose the biologic or endangered species with potential and/or actual habitat in the Project area;

G. Disclose the biological evaluation for the sensitive and management indicator species with potential and/or actual habitat in the Project area;

H. Disclose the snag densities in the Project area, and the method used to determine those

densities;I. Disclose the current, during-project, and post-project road densities in the Project area;J. Disclose the Custer Gallatin National Forest's record of compliance with state best management practices regarding stream sedimentation from ground-disturbing management activities;K. Disclose the Custer Gallatin National Forest's record of compliance with its monitoring requirements as set forth in its Forest Plan;L. Disclose the Custer Gallatin National Forest's record of compliance with the additional monitoring requirements set forth in previous DN/FONSI and RODs on the Custer Gallatin National Forest;M. Disclose the results of the field surveys for threatened, endangered, sensitive, and rare plants in each of the proposed units;N. Please formally consult with the US FWS on the impacts of this project on candidate, proposed, threatened, or endangered species and plants;O. Please consult with the US FWS on the impacts of this project on lynx critical habitat and potential lynx critical habitat;P. Will this Project exacerbate existing noxious weed infestations and start new infestations?Q. Do unlogged old growth forest store more carbon than the wood products that would be removed from the same forest in a logging operation?R. What is the cumulative effect of National Forest logging on U.S. carbon stores? How many acres of National Forest lands are logged every year? How much carbon is lost by that logging?S. Is this Project consistent with [id]research recommendations (Krankina and Harmon 2006) for protecting carbon gains against the potential impacts of future climate change? That study recommends [id]increasing or maintaining the forest area by avoiding deforestation,[rd] and states that [id]protecting forest from logging or clearing offer immediate benefits via prevented emissions.[rd] That study also states that [id]when the initial condition of land is a productive old-growth forest, the conversion to forest plantations with a short harvest rotation can have the opposite effect lasting for many decades . . . [rd] The study does state that thinning may have a beneficial effect to stabilize the forest and avoid stand-replacing wildfire, but the study never defines thinning. In this Project, where much of the logging is clear-cutting and includes removing large trees without any diameter limit, and where the removal of small diameter surface and ladder fuels is an unfunded mandate to the tune of over \$3 million dollars, it is dubious whether the prescriptions are the same type of [id]thinning[rd] envisioned in Krankina and Harmon (2006).T. Please list each visual quality standard that applies to each unit and disclose whether each unit meets its respective visual quality standard. A failure to comply with visual quality Forest Plan standards violates NFMA.U. For the visual quality standard analysis please define [id]ground vegetation,[rd] i.e. what age are the trees, [id]reestablishes,[rd] [id]short-term,[rd] [id]longer term,[rd] and [id]revegetate.[rd]V. Please disclose whether you have conducted surveys in the Project area for this Project for wolverines, pine martins, northern goshawk and lynx, grizzly bears as required by the Forest Plan.W. Please disclose how often the Project area has been surveyed for wolverines, pine martins, northern goshawks, grizzly bears and lynx.X. Is it impossible for a wolverines, pine martins, northern goshawks, grizzly bears and lynx to inhabit the Project area?Y. Would the habitat be better for wolverines, pine martins, northern goshawks, monarch butterflies, grizzly bears and lynx if roads were removed in the Project area?Z. What is the U.S. FWS position on the impacts of this Project on wolverines, whitebark pine, monarch butterflies, grizzly bears and lynx? Have you conducted ESA consultation? If not please do so.AA. Please provide us with the full BA for the wolverines, whitebark pine, monarch butterflies, pine martins, northern goshawks, grizzly bears and lynx.BB. What is wrong with uniform forest conditions?CC. Has the beetle kill contributed to a diverse landscape?DD. Why are you trying to exclude stand replacement fires when these fires help aspen and whitebark pine?EE. Please disclose what is the best available science for restoration of whitebark pine.FF. Disclose the level of current noxious weed infestations in the Project area and the cause of those infestations;GG. Disclose the impact of the Project on noxious weed infestations and native plant communities;HH. Disclose the amount of detrimental soil disturbance that currently exists in each proposed unit from previous logging and grazing activities;II. Disclose the expected amount of detrimental soil disturbance in each unit after ground disturbance and prior to any proposed mitigation/remediation;JJ. Disclose the expected amount of detrimental soil disturbance in each unit after proposed mitigation/ remediation;KK. Disclose the analytical data that supports proposed soil mitigation/ remediation measures;LL. Disclose the timeline for implementation;MM. Disclose the funding source for non-commercial activities proposed;NN. Disclose the current level of old growth forest in each third order drainage in the Project area;OO. Disclose the method used to quantify old growth forest acreages and its rate of error based upon field review of its predictions;PP. Disclose the historic levels of mature and old growth forest in the Project area;QQ. Disclose the level of mature and old growth forest necessary to sustain viable populations of

dependent wildlife species in the area; RR. Disclose the amount of mature and old growth forest that will remain after implementation; SS. Disclose the amount of current habitat for old growth and mature forest dependent species in the Project area; TT. Disclose the amount of habitat for old growth and mature forest dependent species that will remain after Project implementation; UU. Disclose the method used to model old growth and mature forest dependent wildlife habitat acreages and its rate of error based upon field review of its predictions; VV. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security currently available in the area; WW. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security during Project implementation; XX. Disclose the amount of big game (moose and elk) hiding cover, winter range, and security after implementation; YY. Disclose the method used to determine big game hiding cover, winter range, and security, and its rate of error as determined by field review; please demonstrate compliance with the Montana Elk-Logging Study Recommendation for Road Management as required by the Forest Plan. The Road Management requirement states: [ldquo]Where maintenance of elk habitat quality and security is an important consideration, open road densities should be held to a low level, and every open road should be carefully evaluated to determine the possible consequences for elk.[rdquo] Please demonstrate compliance with the requirement to hold open road densities to a low level. ZZ. Disclose and address the concerns expressed by the ID Team in the draft Five-Year Review of the Forest Plan regarding the failure to monitor population trends of MIS, the inadequacy of the Forest Plan old growth standard, and the failure to compile data to establish a reliable inventory of sensitive species on the Forest; AAA. Disclose the actions being taken to reduce fuels on private lands adjacent to the Project area and how those activities or lack thereof will impact the efficacy of the activities proposed for this Project; BBB. Disclose the efficacy of the proposed activities at reducing wildfire risk and severity in the Project area in the future, including a two-year, five-year, ten-year, and 20-year projection; CCC. Disclose when and how the Custer Galatin National Forest made the decision to suppress natural wildfire in the Project area and replace natural fire with logging and prescribed burning; DDD. Disclose the cumulative impacts on the Forest-wide level of the Custer Galatin National Forest's policy decision to replace natural fire with logging and prescribed burning; EEE. Disclose how Project complies with the Roadless Rule; FFF. Disclose the impact of climate change on the efficacy of the proposed treatments; GGG. Disclose the impact of the proposed project on the carbon storage potential of the area; HHH. Disclose the baseline condition, and expected sedimentation during and after activities, for all streams in the area; III. Disclose maps of the area that show the following elements: 1. Past, current, and reasonably foreseeable logging units in the Project area; 2. Past, current, and reasonably foreseeable grazing allotments in the Project area; 3. Density of human residences within 1.5 miles from the Project unit boundaries; 4. Hiding cover in the Project area according to the Forest Plan definition; 5. Old growth forest in the Project area; 6. Big game security areas; 7. Moose winter range; There is a huge problem with the 2006 Travel Plan, and the Biological Opinion. There is no discussion as to how this amendment will be applied to the Project, even though it is Forest Plan direction. There also is no discussion as to the lack of consistency between the 2006 Travel Plan road analysis for grizzly bears with more recent improvements. The public cannot determine what OMARD and TMARD terms and conditions apply to the project area. In addition, the bear analysis units for grizzly bear management and the Travel Plan areas are different, making it even more difficult for the public to determine how management of grizzly bears is being planned and implemented. These problems need to be addressed in a scoping document. If the agency expects this Forest Plan direction to [ldquo]be gone[rdquo] with delisting before the project is implemented, this also needs to be disclosed to the public. The best available science requires specific numeric limits on total motorized route density and open motorized route density, and requires a specific numeric minimum of secure (i.e. roadless) habitat in grizzly bear habitat. Will the project have these requirements? Cumulative effects must include State and private activities, therefore, please include state and private lands in your analysis of road density and secure habitat. The RLM Project Description Form states the Purpose and Need as: Today, the Red Lodge Mountain Ski Area and community of Red Lodge occur immediately down drainage of the Cascade burn. Existing vegetation conditions in the lower West Fork Rock Creek mirror conditions that burned in 2008. The high fuel load in the project area could generate a wildfire event comparable to the Cascade Fire, likely burning the ski area and surrounding developments, and impacting the community of Red Lodge. For Red Lodge Mountain, likely impacts include the destruction of infrastructure and forest canopy needed to preserve winter snow cover within the ski area. If Red Lodge Mountain, the largest employer in Carbon County, ceased operation, it would

create dire financial consequences for the town of Red Lodge and Carbon County. Other likely impacts include extensive loss of structures within the community of Red Lodge and surrounding developments. [bull] Reduce the risk of high-intensity wildfire within and adjacent to Red Lodge Mountain Ski area [bull] Reduce the risk of high-intensity wildfire adjacent to the community of Red Lodge and surrounding developments [bull] Provide a safer environment to conduct wildfire suppression operations [bull] Provide more suppression options to wildfire managers

A new study by Dominick A. DellaSala et al. found that reviewed 1500 wildfires between 1984 and 2014 found that actively managed forests had the highest level of fire severity. Please find DellaSala et al. attached. While those forests in protected areas burned, on average, had the lowest level of fire severity. In other words, the best way to reduce severe fires is to protect the land as wilderness, not [ldquo]manage[rddquo] it, therefore the purpose and need of the project is not valid. Please include an alternative that has no commercial logging outside the Home Ignition Zone (100 feet from a home) and no new road construction. Hitt and Frissell showed that over 65% of waters that were rated as having high aquatic biological integrity were found within wilderness-containing subwatersheds. Trombulak and Frissell concluded that the presence of roads in an area is associated with negative effects for both terrestrial and aquatic ecosystems including changes in species composition and population size. (USFS 2000, pages 3-80-81). "High integrity [forests] contain the greatest proportion of high forest, aquatic, and hydrologic integrity of all are dominated by wilderness and roadless areas [and] are the least altered by management. Low integrity [forests have] likely been altered by past management are extensively roaded and have little wilderness." (USFS 1996a, pages 108, 115 and 116). "Much of this [overly dense forest] condition occurs in areas of high road density where the large, shade-intolerant, insect-, disease- and fire-resistant species have been harvested over the past 20 to 30 years. Fires in unroaded areas are not as severe as in the roaded areas because of less surface fuel, and after fires at least some of the large trees survive to produce seed that regenerate the area. Many of the fires in the unroaded areas produce a forest structure that is consistent with the fire regime, while the fires in the roaded areas commonly produce a forest structure that is not in sync with the fire regime. In general, the effects of wildfires in these areas are much lower and do not result in the chronic sediment delivery hazards exhibited in areas that have been roaded." (USFS 1997a, pages 281-282). "Increasing road density is correlated with declining aquatic habitat conditions and aquatic integrity. An intensive review of the literature concludes that increases in sedimentation [of streams] are unavoidable even using the most cautious roading methods." (USFS 1996b, page 105). "This study suggests the general trend for the entire Columbia River basin is toward a loss in pool habitat on managed lands and stable or improving conditions on unmanaged lands." (McIntosh et al 1994). "The data suggest that unmanaged systems may be more structurally intact (i.e., coarse woody debris, habitat diversity, riparian vegetation), allowing a positive interaction with the stream processes (i.e., peak flows, sediment routing) that shape and maintain high-quality fish habitat over time." (McIntosh et al 1994). "Although precise, quantifiable relationships between long-term trends in fish abundance and land-use practices are difficult to obtain (Bisson et al. 1992), the body of literature concludes that land-use practices cause the simplification of fish habitat." [rdquo] (McIntosh et al 1994). "Land management activities that contributed to the forest health problem (i.e., selective harvest and fire suppression) have had an equal or greater effect on aquatic ecosystems. If we are to restore and maintain high quality fish habitat, then protecting and restoring aquatic and terrestrial ecosystems is essential." (McIntosh et al 1994). "Native fishes are most typically extirpated from waters that have been heavily modified by human activity, where native fish assemblages have already been depleted, disrupted, or stressed []." (Moyle et al 1996). "Restoration should be focused where minimal investment can maintain the greatest area of high-quality habitat and diverse aquatic biota. Few completely roadless, large watersheds remain in the Pacific Northwest, but those that continue relatively undisturbed are critical in sustaining sensitive native species and important ecosystem processes (Sedell, et. al 1990; Moyle and Sato 1991; Williams 1991; McIntosh et al. 1994; Frissell and Bayles 1996). With few exceptions, even the least disturbed basins have a road network and history of logging or other human disturbance that greatly magnifies the risk of deteriorating riverine habitats in the watershed." (Frissell undated). "[A]llocate all unroaded areas greater than 1,000 acres as Strongholds for the production of clean water, aquatic and riparian-dependent species. Many unroaded areas are isolated, relatively small, and most are not protected from road construction and subsequent timber harvest, even in steep areas. Thus, immediate protection through allocation of the unroaded areas to the production of clean water, aquatic and riparian-dependent resources is necessary to prevent degradation of this high quality habitat and should not be postponed." (USFWS et al 1995). "Because of fire

suppression, timber harvest, roads, and white pine blister rust, the moist forest PVG has experienced great change since settlement of the project area by Euroamericans. Vast amounts of old forest have converted to mid seral stages." (USFS/BLM 2000, page 4-58). "Old forests have declined substantially in the dry forest PVG. In general, forests showing the most change are those that have been roaded and harvested. Large trees, snags, and coarse woody debris are all below historical levels in these areas." (USFS/BLM 2000, page 4-65). "High road densities and their locations within watersheds are typically correlated with areas of higher watershed sensitivity to erosion and sediment transport to streams. Road density also is correlated with the distribution and spread of exotic annual grasses, noxious weeds, and other exotic plants. Furthermore, high road densities are correlated with areas that have few large snags and few large trees that are resistant to both fire and infestation of insects and disease. Lastly, high road densities are correlated with areas that have relatively high risk of fire occurrence (from human-caused fires), high hazard ground fuels, and high tree mortality." (USFS 1996b, page 85, parenthesis in original). In simpler terms, the Forest Service has found that there is no way to build an environmentally benign road and that roads and logging have caused greater damage to forest ecosystems than has the suppression of wildfire alone. These findings indicate that roadless areas in general will take adequate care of themselves if left alone and unmanaged, and that concerted reductions in road densities in already roaded areas are absolutely necessary. Indeed, other studies conducted by the Forest Service indicate that efforts to "manage" our way out of the problem are likely to make things worse. By "expanding our efforts in timber harvests to minimize the risk of large fire, we risk expanding what are well established negative effects on streams and native salmonids. The perpetuation or expansion of existing road networks and other activities might well erode the ability of [fish] populations to respond to the effects of large scale storms and other disturbances that we clearly cannot change." (Reiman et al 1997). The following quotes demonstrate that trying to restore lower severity fire regimes and forests through logging and other management activities may make the situation worse, compared to allowing nature to reestablish its own equilibrium. These statements are found in "An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins, Volume 3 (ICBEMP):" "Since past timber harvest activities have contributed to degradation in aquatic ecosystems, emphasis on timber harvest and thinning to restore more natural forests and fire regimes represent risks of extending the problems of the past." (ICBEMP page 1340). "Proposed efforts to reduce fuel loads and stand densities often involve mechanical treatment and the use of prescribed fire. Such activities are not without their own drawbacks -- long-term negative effects of timber harvest activities on aquatic ecosystems are well documented (see this chapter; Henjum and others 1994; Meehan 1991; Salo and Cundy 1987)." (ICBEMP page 1340). "Attempts to minimize the risk of large fires by expanding timber harvest risks expanding the well-established negative effects on aquatic systems as well. The perpetuation or expansion of existing road networks and other activities might well erode the ability of populations to respond to the effects of fire and large storms and other disturbances that we cannot predict or control (National Research Council 1996)." (ICBEMP page 1342). "Watersheds that support healthy populations may be at greater risk through disruption of watershed processes and degradation of habitats caused by intensive management than through the effects of fire." (ICBEMP page 1342). "Timber harvest, through its effects on forest structure, local microclimate, and fuels accumulation, has increased fire severity more than any other recent human activity. If not accompanied by adequate reduction of fuels, logging (including salvage of dead and dying trees) increases fire hazard by increasing surface dead fuels and changing the local microclimate. Fire intensity and expected fire spread rates thus increase locally and in areas adjacent to harvest". (USFS 1996c, pages 4-61-72). "Logged areas generally showed a strong association with increased rate of spread and flame length, thereby suggesting that tree harvesting could affect the potential fire behavior within landscapes... As a by-product of clearcutting, thinning, and other tree-removal activities, activity fuels create both short- and long-term fire hazards to ecosystems. Even though these hazards diminish over time, their influence on fire behavior can linger for up to 30 years in dry forest ecosystems of eastern Oregon and Washington". (Huff et al 1995). The answer, therefore, is not to try managing our way out of this situation with more roads and timber harvest/ management. In summary: [bullet] Roads have adverse effects on aquatic ecosystems. They facilitate timber sales which can reduce riparian cover, increase water temperatures, decrease recruitment of coarse woody debris, and disrupt the hydrologic regime of watersheds by changing the timing and quantity of runoff. Roads themselves disrupt hydrologic processes by intercepting and diverting flow and contributing fine sediment into the stream channels which clogs

spawning gravels. High water temperatures and fine sediment degrade native fish spawning habitat. A new study by Dominick A. DellaSala et al. found that reviewed 1500 wildfires between 1984 and 2014 found that actively managed forests had the highest level of fire severity. Please find DellaSala et al. attached. While those forests in protected areas burned, on average, had the lowest level of fire severity. In other words, the best way to reduce severe fires is to protect the land as wilderness, not [manage] it, therefore the purpose and need of the project is not valid. "High integrity [forests] contain the greatest proportion of high forest, aquatic, and hydrologic integrity of all are dominated by wilderness and roadless areas [and] are the least altered by management. Low integrity [forests have] likely been altered by past management are extensively roaded and have little wilderness." (USFS 1996a, pages 108, 115 and 116). "Much of this [overly dense forest] condition occurs in areas of high road density where the large, shade-intolerant, insect-, disease- and fire-resistant species have been harvested over the past 20 to 30 years. Fires in unroaded areas are not as severe as in the roaded areas because of less surface fuel, and after fires at least some of the large trees survive to produce seed that regenerates the area. Many of the fires in the unroaded areas produce a forest structure that is consistent with the fire regime, while the fires in the roaded areas commonly produce a forest structure that is not in sync with the fire regime. In general, the effects of wildfires in these areas are much lower and do not result in the chronic sediment delivery hazards exhibited in areas that have been roaded." (USFS 1997a, pages 281-282). "Increasing road density is correlated with declining aquatic habitat conditions and aquatic integrity. 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If we are to restore and maintain high quality fish habitat, then protecting and restoring aquatic and terrestrial ecosystems is essential." (McIntosh et al 1994). "Native fishes are most typically extirpated from waters that have been heavily modified by human activity, where native fish assemblages have already been depleted, disrupted, or stressed []." (Moyle et al 1996). "Restoration should be focused where minimal investment can maintain the greatest area of high-quality habitat and diverse aquatic biota. Few completely roadless, large watersheds remain in the Pacific Northwest, but those that continue relatively undisturbed are critical in sustaining sensitive native species and important ecosystem processes (Sedell, et. al 1990; Moyle and Sato 1991; Williams 1991; McIntosh et al. 1994; Frissell and Bayles 1996). With few exceptions, even the least disturbed basins have a road network and history of logging or other human disturbance that greatly magnifies the risk of deteriorating riverine habitats in the watershed." (Frissell undated). "[A]ll locate all unroaded areas greater than 1,000 acres as Strongholds for the production of clean water, aquatic and riparian-dependent species. Many unroaded areas are isolated, relatively small, and most are not protected from road construction and subsequent timber harvest, even in steep areas. Thus, immediate protection through allocation of the unroaded areas to the production of clean water, aquatic and riparian-dependent resources is necessary to prevent degradation of this high quality habitat and should not be postponed." (USFWS et al 1995). "Because of fire suppression, timber harvest, roads, and white pine blister rust, the moist forest PVG has experienced great change since settlement of the project area by Euroamericans. Vast amounts of old forest have converted to mid seral stages." (USFS/BLM 2000, page 4-58). "Old forests have declined substantially in the dry forest PVG []." In general, forests showing the most change are those that have been roaded and harvested. Large trees, snags, and coarse woody debris are all below historical levels in these areas." (USFS/BLM 2000, page 4-65). "High road densities and their locations within watersheds are typically correlated with areas of higher watershed sensitivity to erosion and sediment transport to streams. Road density also is correlated with the distribution and spread of exotic annual grasses, noxious weeds, and other exotic plants. Furthermore, high road densities are correlated with areas that have few large snags and few large trees that are resistant to both fire and infestation of insects and disease. Lastly, high road densities are correlated with areas that have relatively high risk of fire occurrence (from human caused fires), high hazard

ground fuels, and high tree mortality." (USFS 1996b, page 85, parenthesis in original). In simpler terms, the Forest Service has found that there is no way to build an environmentally benign road and that roads and logging have caused greater damage to forest ecosystems than has the suppression of wildfire alone. These findings indicate that roadless areas in general will take adequate care of themselves if left alone and unmanaged, and that concerted reductions in road densities in already roaded areas are absolutely necessary. Indeed, other studies conducted by the Forest Service indicate that efforts to "manage" our way out of the problem are likely to make things worse. By "expanding our efforts in timber harvests to minimize the risk of large fire, we risk expanding what are well established negative effects on streams and native salmonids. The perpetuation or expansion of existing road networks and other activities might well erode the ability of [fish] populations to respond to the effects of large scale storms and other disturbances that we clearly cannot change." (Reiman et al 1997). The following quotes demonstrate that trying to restore lower severity fire regimes and forests through logging and other management activities may make the situation worse, compared to allowing nature to reestablish its own equilibrium. These statements are found in "An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins, Volume 3 (ICBEMP):" "Since past timber harvest activities have contributed to degradation in aquatic ecosystems, emphasis on timber harvest and thinning to restore more natural forests and fire regimes represent risks of extending the problems of the past." (ICBEMP page 1340). "Proposed efforts to reduce fuel loads and stand densities often involve mechanical treatment and the use of prescribed fire. Such activities are not without their own drawbacks -- long-term negative effects of timber harvest activities on aquatic ecosystems are well documented (see this chapter; Henjum and others 1994; Meehan 1991; Salo and Cundy 1987)." (ICBEMP page 1340). "Species like bull trout that are associated with cold, high elevation forests have probably persisted in landscapes that were strongly influenced by low frequency, high severity fire regimes. In an evolutionary sense, many native fishes are likely well acquainted with large, stand-replacing fires." (ICBEMP page 1341). "Attempts to minimize the risk of large fires by expanding timber harvest risks expanding the well-established negative effects on aquatic systems as well. The perpetuation or expansion of existing road networks and other activities might well erode the ability of populations to respond to the effects of fire and large storms and other disturbances that we cannot predict or control (National Research Council 1996)." (ICBEMP page 1342). "Watersheds that support healthy populations may be at greater risk through disruption of watershed processes and degradation of habitats caused by intensive management than through the effects of fire." (ICBEMP page 1342). "Timber harvest, through its effects on forest structure, local microclimate, and fuels accumulation, has increased fire severity more than any other recent human activity. If not accompanied by adequate reduction of fuels, logging (including salvage of dead and dying trees) increases fire hazard by increasing surface dead fuels and changing the local microclimate. Fire intensity and expected fire spread rates thus increase locally and in areas adjacent to harvest". (USFS 1996c, pages 4-61-72). "Logged areas generally showed a strong association with increased rate of spread and flame length, thereby suggesting that tree harvesting could affect the potential fire behavior within landscapes... As a by-product of clearcutting, thinning, and other tree-removal activities, activity fuels create both short- and long-term fire hazards to ecosystems. Even though these hazards diminish over time, their influence on fire behavior can linger for up to 30 years in dry forest ecosystems of eastern Oregon and Washington". (Huff et al 1995). The answer, therefore, is not to try managing our way out of this situation with more roads and timber harvest/ management. In summary: [bullet] Roads have adverse effects on aquatic ecosystems. They facilitate timber sales which can reduce riparian cover, increase water temperatures, decrease recruitment of coarse woody debris, and disrupt the hydrologic regime of watersheds by changing the timing and quantity of runoff. Roads themselves disrupt hydrologic processes by intercepting and diverting flow and contributing fine sediment into the stream channels which clogs spawning gravels. High water temperatures and fine sediment degrade native fish spawning habitat. In "Fire Ecology in Rocky Mountain Landscapes" by William Baker, Dr. Baker writes on page 435, "a prescribed fire regime that is too frequent can reduce species diversity (Laughlin and Grace 2006) and favor invasive species (M.A. Moritz and Odion 2004). Fire that is entirely low severity in ecosystems that historically experience some high-severity fire may not favor germination of fire dependent species (M.A. Moritz and Odion 2004) or provide habitat key animals (Smucker, Hutto, and Steele 2005)." Baker continues on page 436: "Fire rotations equal the average mean fire interval across a landscape and are appropriate intervals at

which individual points or the whole landscape is burned. Composite fire intervals underestimate mean fire interval and fire rotation (chap 5) and should not be used as prescribed burning intervals as this would lead to too much fire and would likely lead to adversely affect biological diversity (Laughlin and Grace 2006). Please find (Laughlin and Grace 2006) attached. Dr. Baker estimates the high severity fire rotation to be 135- 280 years for lodgepole pine forests. (See page 162.). Baker writes on page 457-458 of *Fire Ecology in Rocky Mountain Landscapes*: "Fire rotation has been estimated as about 275 years in the Rockies as a whole since 1980 and about 247 years in the northern Rockies over the last century, and both figures are near the middle between the low (140 years) and high (328 years) estimates for fire rotation for the Rockies under the HRV (chap. 10). These estimates suggest that since Euro-American settlement, fire control and other activities may have reduced fire somewhat in particular places, but a general syndrome of fire exclusion is lacking. Fire exclusion also does not accurately characterize the effects of land users on fire or match the pattern of change in area burned at the state level over the last century (fig 10.9). In contrast, fluctuation in drought linked to atmospheric conditions appear to match many state-level patterns in burned area over the last century. Land uses that also match fluctuations include logging, livestock grazing, roads and development, which have generally increased flammability and ignition at a time when the climate is warming and more fire is coming." Schoennagel et al (2004) states: "High-elevation subalpine forests in the Rocky Mountains typify ecosystems that experience infrequent, high-severity crown fires. . . . The most extensive subalpine forest types are composed of Engelmann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and lodgepole pine (*Pinus contorta*), all thin-barked trees easily killed by fire. Extensive stand-replacing fires occurred historically at long intervals (i.e., one to many centuries) in subalpine forests, typically in association with infrequent high-pressure blocking systems that promote extremely dry regional climate patterns." Please find Schoennagel et al (2004) attached. Schoennagel et al (2004) states: "it is unlikely that the short period of fire exclusion has significantly altered the long fire intervals in subalpine forests. Furthermore, large, intense fires burning under dry conditions are very difficult, if not impossible, to suppress, and such fires account for the majority of area burned in subalpine forests. Schoennagel et al (2004) states: "Moreover, there is no consistent relationship between time elapsed since the last fire and fuel abundance in subalpine forests, further undermining the idea that years of fire suppression have caused unnatural fuel buildup in this forest zone." Schoennagel et al (2004) states: "No evidence suggests that spruce-fir or lodgepole pine forests have experienced substantial shifts in stand structure over recent decades as a result of fire suppression. Overall, variation in climate rather than in fuels appears to exert the largest influence on the size, timing, and severity of fires in subalpine forests. We conclude that large, infrequent stand replacing fires are 'business as usual' in this forest type, not an artifact of fire suppression." Schoennagel et al (2004) states: "Contrary to popular opinion, previous fire suppression, which was consistently effective from about 1950 through 1972, had only a minimal effect on the large fire event in 1988. Reconstruction of historical fires indicates that similar large, high-severity fires also occurred in the early 1700s. Given the historical range of variability of fire regimes in high-elevation subalpine forests, fire behavior in Yellowstone during 1988, although severe, was neither unusual nor surprising." Schoennagel et al. (2004) states: "Mechanical fuel reduction in subalpine forests would not represent a restoration treatment but rather a departure from the natural range of variability in stand structure." Schoennagel et al (2004) states: "Given the behavior of fire in Yellowstone in 1988, fuel reduction projects probably will not substantially reduce the frequency, size, or severity of wildfires under extreme weather conditions." Schoennagel et al (2004) states: "The Yellowstone fires in 1988 revealed that variation in fuel conditions, as measured by stand age and density, had only minimal influence on fire behavior. Therefore, we expect fuel-reduction treatments in high-elevation forests to be generally unsuccessful in reducing fire frequency, severity, and size, given the overriding importance of extreme climate in controlling fire regimes in this zone. Thinning also will not restore subalpine forests, because they were dense historically and have not changed significantly in response to fire suppression. Thus, fuel-reduction efforts in most Rocky Mountain subalpine forests probably would not effectively mitigate the fire hazard, and these efforts may create new ecological problems by moving the forest structure outside the historic range of variability." Please find Schoennagel et al (2004) attached. The NEPA requires a "hard look" at climate issues, including cumulative effects of the "treatments" in the proposed project when added to the heat, drought, wind and other impacts associated with increased climate risk. Regeneration/Restocking failure

following wildfire, prescribed fire and/or mechanical tree-killing has not been analyzed or disclosed. There is a considerable body of science that suggests that regeneration following fire is increasingly problematic. NEPA requires disclosure of impact on the human environment. Climate risk presents important adverse impacts on cultural, economic, environmental, and social aspects of the human environment. People, jobs, and the economy adjacent to and near the project area. Challenges in predicting responses of individual tree species to climate are a result of species competing under a never-before-seen climate regime one forests may not have experienced before either. In an uncertain future of rapid change and abrupt, unforeseen transitions, adjustments in management approaches will be necessary and some actions will fail. However, it is increasingly evident that the greatest risk is posed by continuing to implement strategies inconsistent with and not informed by current understanding of our novel future.... Achievable future conditions as a framework for guiding forest conservation and management, Forest Ecology and Management 360 (2016) 80–96, S.W. Golladay et al. (Please, find attached) Stands are at risk of going from forest to non-forest, even without the added risk of management as proposed in the project area. The project is currently in violation of NEPA, NFMA, and the APA. ESA regulations mandate that reinitiation of formal consultation is required . . . (b) If new information reveals effects of the action that may affect listed species . . . in a manner or to an extent not previously considered . . . 50 C.F.R. [sect] 402.16(b); see Alliance for the Wild Rockies v. USDA, 772 F.3d 592, 601 (9th Cir. 2014). The grizzly bear is an ESA-listed threatened species that is present on the Forest. Grizzly bears are known to occur in the Project area. The Project is within the Rock Creek Bear Analysis Unit, which is a unit that the Interagency Grizzly Bear Study Team deems to be biologically suitable and socially acceptable areas for grizzly bear occupancy outside of the Yellowstone Grizzly Bear Recovery Zone. The Grizzly Bear Recovery Plan states that roading, logging, and grazing are competitive uses of grizzly bear habitat and that roads probably pose the most imminent threat to grizzly habitat today. The Project authorizes 2100 acres of commercial logging, noncommercial burning and tree removal. USFS's remapping and redefining of lynx habitat requires a stand-alone NEPA analysis and ESA consultation; this was not done. In 2016, the Forest Service chose to remap lynx habitat in the Forest, thereby removing Lynx Amendment protections on a significant amount of area within the Custer National Forest. There is no NEPA analysis for the 2016 remapping, either in a stand-alone format, or a cumulative landscape scale within the analysis for the Project. Please do this NEPA analysis. The Forest Service's remapping of lynx habitat on the Custer National Forest constitutes a major federal action under NEPA because it is a document prepared by the agency that guides or prescribes uses of federal resources, upon which future agency actions will be based. The new mapping categorizes thousands of acres of lynx habitat out of existence and thereby paves the way for future projects to authorize logging and other activities in those areas, even if those activities are prohibited under the Lynx Amendment. Accordingly, the Forest Service must prepare NEPA analysis for the decision to remap lynx habitat on the Custer National Forest and remove protections for over 117,000 acres of lynx habitat. Please disclose the wildland urban interface delineation and open road density in the Project EIS. 1. If the Forest Service did not conduct NEPA for the Carbon County Pre-Disaster Mitigation Plan/Community Wildfire Protection Plan (PDM/CWPP), please immediately start that NEPA process. 2. Please provide a map showing the Carbon County Pre-Disaster Mitigation Plan/Community Wildfire Protection Plan (PDM/CWPP) Wildland Urban Interface (WUI) boundary and the locations of all homes in comparison to the project area. 3. If the Forest Service did not conduct NEPA for the PDM/CWPP Wildland Urban Interface (WUI) boundary, please disclose the cumulative effect of the Red Lodge Mountain Fuels project EIS to avoid illegally tiering to a non-NEPA document. Specifically analyze the decision to prioritize mechanical, human-designed, somewhat arbitrary treatments as a replacement for naturally-occurring fire. 4. Did the Forest Service conduct ESA consultation for the Carbon County Pre-Disaster Mitigation Plan/Community Wildfire Protection Plan? 5. How will the decreased elk security and thermal cover affect wolverines? Please formally consult with the US FWS on the impact of this project on wolverines since they are now a proposed species. 6. Do unlogged old growth forests store more carbon than the wood products that would be removed from the same forest in a logging operation? 7. How much more carbon would the project area absorb every year if the no action alternative is chosen versus the preferred alternative? 8. What is the cumulative effect of National Forest logging on U.S. carbon stores? How many acres of National Forest lands are logged every year? How much carbon is lost by that logging? 9. Is this Project consistent with research recommendations (Frankina and Harmon 2006) for protecting carbon gains

against the potential impacts of future climate change? That study recommends [i]ncreasing or maintaining the forest area by avoiding deforestation,[rdquo] and states that [i]protecting forest from logging or clearing offer immediate benefits via prevented emissions.[rdquo]10. Please disclose the last time the Project area was surveyed for whitebark pine, monarch butterflies, wolverines, pine martins, northern goshawk, grizzly bears and lynx.11. Please disclose how often the Project area has been surveyed for whitebark pine, wolverines, monarch butterflies, pine martins, northern goshawks, grizzly bears and lynx.12. Would the habitat be better for whitebark pine, wolverines, monarch butterflies, pine martins, northern goshawks, grizzly bears and lynx if roads were removed in the Project area?13. What is the U.S. FWS position on the impacts of this Project on whitebark pine, monarch butterflies, wolverines, grizzly bears and lynx? Have you conducted ESA consultation on whitebark pine, monarch butterflies, wolverines, grizzly bears and lynx?14. Please provide us with the full BA for the whitebark pine, wolverines, Monarch butterflies, grizzly bears and lynx.15. How will the Forest Service that closures are effective when they haven't been in the past?16. How often will the closures be monitored to be sure they are effective? Please include monitoring reports for the effectiveness of road closures for the past 10 years.17. How will the Forest Service ensure that illegal roads or trails are not being built?18. Please disclose how many road closure violations were there in the Bear Tooth Ranger District in the last 5 years? The recurring problem of road closure failures undermines the foundation of the Forest Plan's wildlife security standards, which relies on these road closures to achieve certain densities of open and total roads both inside and outside the Recovery Zone. The agencies must address this problem and its impacts in an updated ESA consultation for the Forest Plan and this project. Roads pose a threat to big game and grizzly bears because roads provide humans with access into big game and grizzly bear habitat, which leads to direct bear mortality from accidental shootings and intentional poachings. Big game flee onto private lands during hunting season. Human access also leads to indirect bear mortality by creating circumstances in which bears become habituated to human food and are later killed by wildlife managers. Human access also results in indirect mortality by displacing grizzly bears from good habitat into areas that provide sub-optimal habitat conditions. Displacement may have long term effects: [i]Females who have learned to avoid roads may also teach their cubs to avoid roads. In this way, learned avoidance behavior can persist for several generations of bears before they again utilize habitat associated with closed roads.[rdquo] Both open and closed roads displace grizzly bears: grizzlies avoided roaded areas even where existing roads were officially closed to public use. Females with cubs remained primarily in high, rocky, marginal habitat far from roads. Avoidance behavior by bears of illegal vehicular traffic, foot traffic, and/or authorized use behind road closures may account for the lack of use of areas near roads by female grizzly bears in this area. This research demonstrated that a significant portion of the habitat in the study area apparently remained unused by female grizzlies for several years. Since adult females are the most important segment of the population, this lack of use of both open-road and closed-road areas is significant to the population. In addition to having a significant impact on female grizzly bears, displacement may also negatively impact the survival rates of grizzly cubs: [i]survivorship of the offspring of females that lived in unroaded, high elevation habitat was lower than that recorded in other study areas in the [Northern Continental Divide Ecosystem]. The majority of this mortality was due to natural factors related to the dangers of living in steep, rocky habitats. This is important in that the effects of road avoidance may result not only in higher mortality along roads and in avoidance of and lack of use of the resources along roads, but in the survival of young when their mothers are forced to live in less favorable areas away from roads. Thank you for your time and consideration. Sincerely yours, Mike Garrity, Executive Director Alliance for the Wild Rockies And for Sara Johnson, Director Native Ecosystems Council And for Steve Kelly, Director Montana Ecosystems Defense Council And for Jason L. Christensen [ndash] Director Yellowstone to Uintas Connection