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January 18, 2022

Objection Reviewing Officer

Northern Region

26 Fort Missoula Road

Missoula, MT 59804

RE: OBJECTION AGAINST THE GOLD BUTTERFLY DRAFT RECORD OF DECISION

Hello,

Native Ecosystems Council, the Alliance for the Wild Rockies, Yellowstone to Uintas Connection, and Friends of the Bitterroot would like to submit the following objection against the proposed Gold Butterfly Project on the Stevensville Ranger District of the Bitterroot National Forest.

1. **Name and Addresses of Objectors**

Lead Objector, Sara Johnson, Director, Native Ecosystems Council, PO Box 125, Willow Creek, MT, 59760; phone 406-579-3286; sjjohnsonkoa@yahoo.com

Mike Garrity, Director, Alliance for the Wild Rockies, PO Box 505, Helena, MT 59624; phone 406-459-5936; wildrockies@gmail.com.

Jason Christensen, Director, Yellowstone to Uintas Connection, PO Box 363, Paris Idaho; phone 435-881-6917; jason@yellowstoneuintas.org.

Jim Miller, President; Friends of the Bitterroot, PO Box 442, Hamilton, MT 59840.

Signed for Objectors this 18th day of January, 2022

Sara Johnson

2. Name of Project being Objected to:

Gold Butterfly Project Draft Record of Decision, December 2021.

3. Location of Project

Stevensville Ranger District of the Bitterroot National Forest

4. Responsible Official

Matt Anderson, Forest Supervisor, Bitterroot National Forest.

5. Attachments

This Objection includes 2 attachments, Appendix A and Appendix B. Appendix A contains the full citations and relevant portions of literature and/or reports cited in the Objection. Appendix B contains a Declaration by Dr. Sara Johnson that addresses how the minimum screening criteria as per Green et al. (2011) and the complete old growth characteristics differ. Copies of both the 1992 and 2011 versions of old growth inventory information for western Montana forests were included in Appendix A for clarification.

6. Statement that Demonstrates Connection between Prior Specific Written Comments on the Proposed Project and Content of the Objection.

Appellants submitted joint written comments on the Draft Supplemental Environmental Impact Statement (DSEIS) on July 9, 2021. These comments addressed many issues regarding management of old growth, elk habitat effectiveness (EHE), elk thermal cover, snags, and whitebark pine. Concerns regarding old growth most notably was the failure of the Forest Service to incorporate the entire Green et al. 2011 inventory data for old growth, but instead used just old growth screening criteria, and then claiming that partial application of the Green definitions for old growth will not negatively impact wildlife. Other concerns about old growth management we identified included a failure to define old growth levels in Management Area (MA) 3b, a failure to document threats to old growth with current science or monitoring, making false claims that the only way to save old growth stands is by logging, failing to define how logging is designed for wildlife rather than timber management objectives, claiming that old growth needs to be logged in order to arbitrarily change the species composition of the stand in order to promote timber production, and failing to cite any current science as to how logging old growth will impact wildlife, including Forest Plan Management Indicator Species (MIS) for old growth. The proposed changes to the Forest Plan old growth direction will create a significant change in old growth habitat to be provided in the Gold Butterfly Project Area, and for other projects such changes are planned, including the Mud Creek and Bitterroot Front Projects. In addition, the agency noted that the Green et al. (2011) definition has been applied through most of the current planning

period. So the cumulative impact of changing the Forest Plan definition of old growth is likely significant, which requires a programmatic Forest Plan amendment as per current National Forest Management Act (NFMA) planning rules. The current stated level of old growth of roughly 13% is below the recommended minimum level of old growth needed for wildlife, yet this problem was never addressed for this project. Addressing this issue would require amending the Forest Plan to require and/or begin restoration of adequate amounts of old growth, instead of continuing on with the current Forest Plan direction.

The concerns we raised about elk habitat effectiveness (EHE) first included a failure of the Forest Service to complete a programmatic Forest Plan amendment if further deletions of EHE were going to be done, since these deletions were effectively causing failure of the Forest Plan to meet the requirements for elk, an MIS for the Forest, including failure to maintain hunting opportunities on the Forest, a failure to maintain elk on public forests lands in the fall hunting season due to displacement to adjacent private lands, and as well, failure to demonstrate that management practices by the agency are maintaining adequate cow/calf and bull/cow ratios across the Forest, as well as within the Gold Butterfly Project Area. We also noted that the amendment violates the planning regulations because there were no alternatives provided, the EHE levels that the amendment was being changed to was not identified, and an insufficient analysis as to how this amendment, along with past amendments, is affecting Forest Plan goals and objectives for MIS elk. Non-compliance with the EHE Forest Plan standard across the Forest is significant, in part due to site-specific amendments, with almost a third of the 3rd order drainages failing the standard (1oo out of 386). We also expressed concerns that the agency has failed to amend the Forest Plan to address the requirement that no more than 40% of the bull elk harvest not occur within the first week of the hunting season; this standard has unofficially been replaced with the Hillis security definition. Use of this Hillis definition demonstrates that past management of elk security, including EHE, has resulted in very low levels of security in the Gold Butterfly Project area. This is a good indication that significant impacts already exist, which will be exacerbated by deleting the EHE requirement for this project area. Finally, we noted that the

agency claim that roads closed to the public do not affect EHE is false, since the current best science indicates any motorized use of a road affects elk.

There was no application of a Forest Plan standard, to use the Coordinating Elk and Timber Management recommendations by Lyon and others (1985) to the analysis of project impacts or EHE and thermal cover amendments on elk, even though these recommendations are required to be incorporated into project analysis as per the Forest Plan. Our concerns about large openings were addressed by modifications of the proposed action, where no openings over 40 acres would be implemented. Still, there was no analysis of how the forest patches between openings would be consistent with wildlife needs, as is required by the Forest Plan. We also noted that the Coordinating Elk and Timber Management recommendation that no forest thinning occur adjacent to clearcuts was never addressed. This requirement has become even more important since many units that were proposed for clearcutting have since been changed to thinning units in the final proposed action. Finally, the NEPA analysis for the Gold Butterfly Project was silent on the Forest Plan FEIS definition of elk security, which is areas from 7,000-8,000 acres in size below 7,000 feet in elevation.

Finally, in regards to thermal cover, and the proposal to delete this standard for the Gold Butterfly Project, we noted that past and planned deletions of this Forest Plan standard are clearly significant in regards to Forest Plan goals and objectives for elk habitat, and as such, require a programmatic Forest Plan amendment. In addition, it is clear that failures of the agency to meet this standard in the Gold Butterfly Project Area has resulted in significant displacement of elk from public to private land winter ranges. Additional reductions in thermal cover will only exacerbate this problem. And as with the amendment for EHE, the agency did not provide any alternative levels for thermal cover, nor did they define what level the thermal cover standard was being changed for the Gold Butterfly Project. The planning regulations for this amendment are thus not being followed. We also noted that the agency justification for deleting the thermal cover standard, the Cook et al. (1998) study, is invalid as this was a study of penned elk calves and yearlings that were fed, and would not apply to free-ranging elk use of thermal

cover. The agency did not disclose what the thermal cover level is for MA 2 in the project area, or what it will be after project completion, so the actual impact of the amendment is unknown. Finally, we noted that the Forest Plan suggestion that 40% of big game winter range is cover was not addressed by the agency. We since discovered that the Guides for Elk Habitat Objectives (1978) is a Forest Plan standard and it requires 20% thermal cover and 20% hiding cover on big game winter ranges. So this standard would likely not be met by the Gold Butterfly Project for MA 2 winter range lands.

Finally, we raised concerns about an invalid snag management standard in the Forest Plan, which is outdated by over 20 years. We also noted that the proposed treatments for whitebark pine are not based on any current science, since current research indicates such treatments have not been successful in producing whitebark pine regeneration. Because the FEIS and the DSEIS did not contain any information or maps on the WUI for the Project Area, we did not have the required information to know the WUI delineation was incorrect.

7. Proposed Remedy

The agency addressed only one of our many concerns for the Gold Butterfly Project, which was openings over 40 acres in size. No such openings will occur for the modified draft decision. However, all of our other concerns remain. The Gold Butterfly Project will have severe adverse impacts to almost all wildlife species that occur on the Forest, and this project should not go forward. Any vegetation treatment projects that are replanned for this landscape need to adhere to all Forest Plan standards, and more importantly, need to be implemented under an amendment to the Forest Plan that corrects the deficiency in levels of old growth required. These required old growth levels need to reflect recommendations and/or reports published for wildlife, which would be 20-25% old growth as per the complete definition of old growth as per the Green et al. (2011) white paper inventory.

8. Description of those aspects of the Decision Objectors believe violate laws, regulations or policy.

I. The Forest Service is violating the NFMA, the NEPA, the APA and the ESA.

1. The agency has failed to complete a programmatic Forest Plan amendment, as is required by the 1982/2012 planning rules, because the serial site-specific amendments associated with big game habitat, including elk habitat effectiveness, security cover, and thermal cover on winter ranges are having significant adverse effects of elk use of public forest lands; a similar programmatic is also required for changing old growth definitions and size, since the agency acknowledges existing Forest Plan direction for old growth as per the definition has essentially never been followed by the agency, and in addition to the Gold Butterfly Project, a different definition for old growth will also be applied to the Mud Creek and Bitterroot Front Projects.

The agency acknowledges that they have been amending the thermal cover and elk habitat effectiveness standards as per the 1976 Bitterroot Forest Plan for many years, as noted in Appendix D of the Final Environmental Impact Statement for the Gold Butterfly Project. These serial amendments are a violation of the NFMA because they in effect eliminate Forest Plan direction for elk, which is preventing the agency from meeting the objectives and goals of this plan. A programmatic amendment to the Forest Plan is required, so that the cumulative impacts of these serial amendments can be evaluated as per the NEPA. These cumulative impacts may be significant, and interfere with Forest Plan goals and objectives for elk.

Indeed, it is clear that significant adverse impacts exist from the serial amendments for winter thermal cover. The Wildlife Report for the project notes

that currently, the majority of elk in this hunting district spend most or all of the winter down on adjacent private lands, which indicates the winter ranges on public lands are inadequate for elk.

There was no information ever provided to demonstrate that summer and fall elk use on public forest lands of the project area has not significantly declined as well. Displacement of elk to private lands in the fall is a known management concern in Montana (Lowrey et al. 2020, USDA/MFWP 2013). Providing total elk numbers in the entire hunting district does not display elk use on public lands, including in both the summer and fall, especially given that the agency already acknowledges elk use of private lands has progressively increased over time. One factor likely responsible for declining elk summer use on pubic forest lands is high motorized route densities (Christensen et al. 1993). And one likely factor for high levels of elk displacement to private lands in the fall hunting season is again, high motorized route densities along with limited forested cover (cover in the Gold Butterfly project area and HD is noted to be very low) (Hillis et al. 1991). Current research on elk displacement from active motorized routes indicates that displacement is occurring up to 2 miles from roads (Lowrey et al. 2020) which is much higher than noted in the Hillis Paradigm. As well, claim that the proposed site-specific amendment for elk habitat effectiveness will not have any direct, indirect or cumulative adverse impacts on elk are also not supported by the agency's own information, including a very low current level of big game security. It is clear a programmatic amendment for thermal cover and EHE is required in order for the agency to demonstrate these serial amendments have not changed attainment of Forest Plan goals and objectives for elk.

The agency's use of total elk population as an index to elk security and thermal cover is clearly invalid. The current measures of elk habitat quality and impacts of hunting on elk are the cow/calf ratios and bull/cow ratios, with 25 calves per 100 cows, and 15 bulls per 100 cows being adequate. There was no information provided on these 2 measures for elk population impacts provided in the Gold Butterfly NEPA documents, including hunting district 261. However, limited information was available in the 201-2013 Forest Plan monitoring report. This

report notes that cow/calf and bull/cow ratios continue to be concern in some of the hunting districts that occur across the Bitterroot National Forest; hunting districts with low measures of these 2 criteria included 240, 250, and 270, with 261 being adequate until 2013. The total for the Bitterroot Valley was low for the bull/cow ratios. There is no information provided since 2013 on these 2 criteria for elk on the Bitterroot National Forest since 2013. Thus it is unknown how the serial amendments for thermal cover and EHE are impacting cow/calf and bull/cow ratios on the Bitterroot Forest, or within Hunting District 261, where the Gold Butterfly Project is planned.

A programmatic amendment for the old growth definition change is also required, because the definition change as being applied by the Forest Service allows the complete elimination of old growth forests in the Gold Butterfly Project, and elsewhere where this altered old growth definition will be applied, such as the Mud Creek and Bitterroot Front Projects. This programmatic analysis is also required because the agency needs to demonstrate that past management of old growth as per the modified definition (minimum criteria as per Green et al. 2011) have not resulted in elimination of old growth below the Bitterroot Forest Plan standards, which is roughly 10% of each 3rd order drainages of MAs 1,2,3a, 3b, and 3c (Project FSEIS at page 7). There is no valid measure of old growth as per the Bitterroot Forest Plan definition available for the Gold Butterfly Project or for the forest as a whole, because the FIA data used to measure old growth may be based on only a partial definition of old growth as per Green et al. (2011), instead of the complete definition of old growth. In effect, the agency has not provided any valid information as to the current condition of old growth due to long-term implementation of an invalid definition of old growth, or the minimum screening criteria of Green et al. (2011). The Forest Plan indicates that at the time of plan implementation, 35% of suitable timber lands were old growth. However, the current condition of valid old growth on the Forest is unknown due to a lack of application of the Forest Plan definition of old growth.

2. The Forest Service is failing to adhere to requirements for site-specific amendments to the Forest Plan.

The proposed Forest Plan amendments for thermal cover, elk habitat effectiveness, and old growth habitat do not meet the requirements of the 1982 and/or 2012 NMFA regulations for completing Forest Plan amendments. For example, the agency did not identify what the amended standards are for thermal cover, elk habitat effectiveness and old growth patch size. A replacement standard is required, or otherwise the agency is simply eliminating Forest Plan direction for elk and old growth, which nullifies the purpose of a Forest Plan. Instead of replacing elk and old growth patch size standards with a new standard, the agency simply suspended the standards. Because the standards were suspended, the agency failed to provide alternatives for the proposed amendment as well.

3. The agency did not define how the Forest Plan site-specific amendment for thermal cover will affect the MA 2 winter range in the project area (winter range on MA 2 lands were never evaluated); the amendment did not address and thus suspend MA 2 standards for thermal cover, including the standard that the Guides for Elk Habitat Objectives (1978) "will be followed" in planning timber harvest on MA2 lands; the amendment for thermal cover did not include the Forest Plan ROD standard at 31 that the Coordinating Elk and Timber Management recommendations by Lyon et al. (1985) "will be followed" for projects, including management of big game winter ranges; claims that the current best science indicates that thermal cover is not an important management requirement on elk winter range were not supported with valid science; the rationale for not implementing the Guides for Elk Habitat Objectives (USDA 1978) was illogical.

There is no analysis of the current level of thermal cover on MA 2 acres in the Project Area. Instead, the agency only addresses thermal cover in the project area and hunting district, which is not the same as the Forest Plan standard. The Forest Plan ROD identifies a 25% thermal cover standard on elk winter range, but the standard for thermal cover in the Forest Plan is specific to Management Area 2. There is no analysis in the Gold Butterfly NEPA documents as to what the current

or planned level of thermal cover will be on MA 2 lands in the Gold Butterfly Project Area. Thus the effect of this site-specific amendment for thermal cover is unknown, in spite of a planned logging of almost 2,000 acres of elk winter range.

The agency did not follow the Forest Plan MA 2 standard that requires that the Guides for Elk Habitat Objectives (1978) will be followed in timber management projects. This standard was not "suspended" for the Gold Butterfly Project. These guidelines identify "optimum elk habitat", which is a stated goal of MA 2, as 20% winter thermal cover and 20% winter hiding cover, and a limit of 20% openings (open forage). These guidelines note that thermal cover is of paramount importance on winter range.

The agency did not follow the required direction in the Forest Plan ROD at 8 to apply the Coordinating Elk and Timber Management study by Lyon et al. (1985). These recommendations, based on a 15-year study that included the Bitterroot National Forest, include that for big game winter ranges west of the Divide, the presence of larger trees in a dense multistoried stand is desirable; on a heavily forested winter range, management can remove small patches of timber on south and west-facing slopes, but these need to be designed to provide adjacent forested cover that will provide thermal cover and bedding sites; any modification should be planned on a site-specific basis, with the primary emphasis on maintaining adjacent cover to foraging areas; conservation of stored energy as well as intake of energy is important.

Although the agency cited the USDA/MFWP 2013 elk management recommendations in the wildlife report, the recommendations of this report were not addressed in the proposed amendment to eliminate thermal cover requirements on big game winter range. The agency claims that the current best science was used to claim that elk do not need thermal cover on winter ranges, yet failed to reference the USDA/MFWP 2013 recommendations. These recommendations note that the literature suggests that forested cover on winter ranges may have multiple functions including snow interception, thermal

modulation, wind buffering, and to provide areas that hide animals and provide security in the face of disturbances; these are provided by forest stands that are mature with a relatively high canopy cover; agency participants ultimately agreed that elk may use cover in the winter for a variety of reasons that may include thermoregulation, but that forest cover may also be important in keeping forage available to elk in some conditions (crusty and/or deep snow), or to buffer elk from potential disturbances; big trees and multi-layered canopies may provide benefits not provided by small trees or single layer forests; the participants concluded that coniferous cover should be generally maintained on elk winter ranges within the capability of the landscape; structural conditions required to provide for snow interception may not recover for 60 years or more.

These 2013 recommendations also address the Cook et al. (1998) study. This 1998 report was cited in the wildlife report for the Gold Butterfly NEPA analysis as the justification for suspending the Forest Plan thermal cover requirements. The 2013 recommendations noted that this study was not a valid measure of elk use of thermal cover, as penned young elk that were fed daily represented laboratory conditions not indicative of thermal cover requirements for wild, free-roaming elk.

The Cook et al. (1998) study has also been noted to be an invalid study of elk thermal cover needs by Thompson et al. (2005). That study documented the importance of forage availability in the coniferous stands when snow conditions in grasslands become crusty; elk shifted to forests when deep, crusted snow developed on the winter range; they also noted that forests are forage, including use of conifers such as Douglas-fir (tips of branches) and arboreal lichens; also forage on grasslands is no good if it cannot be reached due to deep and/or crusty snow; they also noted that it was important to maintain connected patches of denser forest between more open foraging areas; they also noted that 80% of the bulls in the local elk population wintered entirely within forests.

The agency claims that the suspension of the elk thermal cover standard for MA 2 winter range, along with past suspensions, has not and will not affect elk is clearly an invalid analysis. The wildlife report notes that both thermal and hiding cover are limited in the Gold Butterfly project area due to past logging and fuels reduction projects (the actual level of thermal and hiding cover within MA 2 lands within the Gold Butterfly Project Area was never identified). Fuels reduction projects have directly eliminated cover, as has precommercial thinning of old harvest units. And many of the unthinned old harvest units are classified as "forested forage" which is not hiding cover. So the past management of this MA 2 winter range has been recognized as a habitat impact to elk. Along with this recognition, the agency notes that currently, elk are noted to spend large amounts of the winter on adjacent private lands, indicating thermal cover levels are inadequate.

The agency did not amend the MA 2 standards for big game winter range, and without such an amendment, the agency is in violation of the Forest Plan. The MA2 standard for big game winter range is to have 20-30% in thermal cover, 55-65% in forage (forested or nonforested forage), and the remaining in hiding cover. Thus this standard requires a minimum of 20% thermal cover, and a range of 5-25% hiding cover, depending on other cover-forage values. There is no mention of this MA 2 standard in the proposed amendment for thermal cover.

The impacts of this degradation of MA 2 lands needs to be fully assessed as Forest Plan goals and objectives, to "optimize elk winter range" on MA2 lands. How will this amendment (loss) affect elk use of public winter ranges? What specific benefits to elk outweigh the deletion of thermal cover so that Forest Plan goals and objectives are still going to be met? This assessment, as is required by the NFMA planning rules, was never completed for the proposed amendment of thermal cover for the Gold Butterfly Project.

4. The agency did not define how the Forest Plan standard for hiding cover and openings in MA 2 lands of big game winter range will be met with project implementation.

The MA2 standard for hiding cover ranges from 5% to 25%, depending on the level of thermal cover, which can range from 20-30%, and forage, which can range from 55% to 65%. Combined levels of thermal and hiding cover would range from 35-45% as per this standard. This is consistent with the Forest Plan identification of 40% hiding and thermal cover on big game winter ranges at the end of the first decade (Forest Plan II-14). There was also no analysis as to how the project complies with the Forest Plan standard to use the Guides for Elk Habitat Objectives to manage MA 2 winter range lands. These guides require maintaining 20% hiding cover, and no more than 20% openings. Compliance with this Forest Plan direction has not been demonstrated.

5. The Forest Plan standard to use the Guides for Elk Habitat Objectives (USDA 1978) was not deleted in any proposed amendments, which means this standard was required to be included in the analysis of the Gold Butterfly Project effects on elk winter range.

An MA2 standard for big game winter range includes "Guides for Elk Habitat Objectives" (USDA 1978) will be followed in any timber harvest activity in this MA. These guides were referenced in the Wildlife Report (page 97) for the Project, and it appears that the agency justified failure to include this standard in the proposed elk amendments was because the agency has already determined that this standard does not have to be followed. This is based on a claim that that standard includes measures of thermal cover that are not currently being used. A change in methodology for tabulating thermal cover would not require elimination of this direction. The current method the Forest Service uses to measure canopy cover is the Region 1-VMap (see project draft EIS at page 95). Updating the methodology to measure thermal cover would not make the guides invalid. And in any case, if the guides are not going to be used, the agency needs to amendment the Forest Plan.

It also appears that the Forest Service did not evaluate the Guides for Elk Habitat Objectives for the Gold Butterfly Project because after a request for a copy of this

document was made to the agency from NEC, since it was not available in the project record, Moira McKelvey responded to NEC stating that in response to this request, these guides have been posted in supporting section of the project web information (McKelvey 2022).

6. The Forest Plan direction for "Coordinating Elk and Timber Management" by Lyon et al. 1985, and the Montana Fish, Wildlife and Parks (MFWP) road management policy were not addressed in the Gold Butterfly Project, in order to demonstrate compliance with these standards.

The Forest Plan ROD at 8 states that the recommendations of " Coordinating Elk and Timber Management" (Lyon et al. 1985) will be incorporated into project plans, as will the recommendations of the Montana Fish, Wildlife and Parks road management policy. The Forest Plan standards at II-21 say these recommendations "will be considered" in project designs. So the question is, which is defining for standards, the ROD or the Forest Plan? Either way, there is no evidence that either of these recommendations were even considered in the Gold Butterfly Project design, including in the winter range, where much of the proposed logging will occur. There is no analysis provided in the various FEISs and wildlife reports for the Gold Butterfly Project that defines what these recommendations include, and how these were incorporated into the project design for the Gold Butterfly Project. So adherence to this Forest Plan direction is unknown. In particular, there is a conflict between the Coordinating Elk and Timber Management with the Forest Plan amendments for elk habitat effectiveness. The Coordinating Elk and Timber Management recommendations were not included in the Forest Plan amendment, and as such, still stand, as do the MFWP road management recommendations. So the project is likely in violation of both of these recommendations, which are to be incorporated into projects.

One aspect of the Gold Butterfly Project that is clearly in violation of the Coordinating Elk and Timber Management recommendations is to not do forest thinning adjacent to clearcuts. There is no analysis in the Gold Butterfly Project as

to how many of the proposed thinning units are adjacent to existing or planned clearcuts where hiding cover is absent. The requirements of the MFWP road management policy are unknown but potentially are not being met with the Gold Butterfly Project, even though this standard was not deleted as Forest Plan direction for this project.

7. The EHE amendment did not include deleting the Forest Plan standards to include the Coordinating Elk and Timber Management, and the MFWP road management policy direction in project design, meaning that this Forest Plan standard is being violated.

The Forest Plan ROD statement that the Coordinating Elk and Timber Management recommendations "will be followed" in project designs that include timber harvest makes these recommendations a Forest Plan standard. This standard was not deleted in the proposed amendments for EHE. The Coordinating Elk and Timber Management recommendations require the agency to maintain road densities that will maintain elk use in areas where elk are being emphasized. This would include MAs 2, 3a and 3b for the Gold Butterfly Project.

8. The proposed amendment of EHE for the Gold Butterfly Project did not define the current or proposed open road densities for each 3rd order drainage that will be impacted by the Project, which is important information to the public.

The public cannot understand how the proposed suspension of the EHE standards for the project area because the agency never correctly defines how the project will change EHE from current conditions with suspension of the Forest Plan standard. The analysis of 3rd order drainages is limited to roads that will be "open for public use" during the project implementation. Thus administrative use as well as logging use is not being measured by the project. This is why the agency claims that EHE will not be changed by the project. This is clearly false. As is noted in

Christensen et al. (1993), any motorized use on a road affects elk. And as per the 2013 Forest Service/Montana Fish, Wildlife and Parks collaborative recommendations, research was cited indicating that elk avoided roads that had 2-4 vehicle trips per 12 hours or higher; this report also noted that low intensity occasional administrative travel and management activity on routes closed to the public could be reasonably excluded in habitat effectiveness analyses, consistent frequently use non-public routes or temporary roads would detract from habitat effectiveness if such roads are used during the summer. Due to the agency's failure to define elk habitat effectiveness that will occur as a result of the proposed site-specific amendment, the actual effects of this amendment were never disclosed to the public.

9. The Forest Service has discarded Forest Plan definitions and direction regarding security and elk vulnerability, while at the same time substituting more current direction for elk security, all without completing any Forest Plan amendments.

A Forest Plan standard to manage elk habitat so that no more than 40% of the bull harvest occurs during the first week of the hunting season has not been officially deleted as Plan direction. Instead, the agency claims that information required for this measure of elk vulnerability is no longer obtained by the Montana Fish, Wildlife and Parks (MFWP). So in spite of any Forest Plan amendments, the agency has dropped this standard instead of updating it with a new standard. At the same time, the agency still measures management impacts on elk by the length of the hunting season, which is noted to still be 5 weeks. This measure of elk vulnerability is in direct conflict with the standard that requires measuring elk vulnerability by the percentage of bull harvest the first week of the hunting season. So the use of the 5-week hunting season is clearly not a valid measure of elk vulnerability based on the Forest Plan. A substitute measure of elk vulnerability as per the level of harvest the first week could be the current measure used by the MFWP, which is the bull/cow ratio in the winter. Either a substitute measure such as this needs to be amended to the existing standard, or this existing standard needs to be deleted via a Forest Plan amendment, in order

to be consistent with the NFMA. Of course, if most bull elk spend the hunting season on private lands, the bull/cow ratio may not accurately reflect hunting season mortality of bulls.

Also, a new measure of elk vulnerability is being unofficially used as a replacement measure of elk secure habitat, the Hillis Paradigm. The Hillis Paradigm is a suitable measure of elk security habitat on public lands, and was used in the recent research project by Lowrey et al. (2020) as a measure of elk security habitat as per cover patches away from roads. This research has indicated that the 0.5 mile distance from open roads for elk in the fall hunting season may actually be too short; this study also indicated that canopy cover can be an indicator of elk cover. For the Gold Butterfly Project, Hillis security is noted to be only 8%, while at least 30% is recommended. This security will be further reduced with project implementation. Using this measure of elk security, the agency still surprisingly determined that the amendment for EHE would not, nor has in the past, significantly affected elk security habitat. The severely limited security in the Gold Butterfly Project Area clearly is contributing to the ongoing trend of elk to use adjacent private lands more frequently over time.

The Gold Butterfly Project analysis of the proposed amendment for EHE, as well as the analysis of project impacts on elk, was silent on the current Forest Plan definition of security as defined in the Forest Plan FEIS at III-21, and in the Forest Plan FEIS glossary at VII-11. Elk security is defined by areas from 5,000-8,000 acres in size at elevations under 7,000 feet that provide high use fall habitat for elk. The requirement for large blocks of secure habitat (5,000-8,000 acres) is never addressed for the Gold Butterfly Project. Where do these areas exist in the project area, and if they are not present, why have the serial exemptions of EHE not affected elk security habitat and elk displacement from public lands? As was noted in the wildlife report at page 100, elk security is limited in the project area by extensive road systems. The amendment for EHE needs to include an analysis as to how roads have impacted elk security as per the FEIS definition of security, since this definition has not been amended. Also, the agency needs to define what the current level of elk security is in the project area as defined by the Forest Plan FEIS definition. This security habitat also needs to be mapped.

10. The Forest Plan has a standard that requires that the size, shape and location of the area between openings will be consistent with water, wildlife and visual resources considerations; documentation of the rationale and tradeoffs will be required if the proposed openings are larger than the intervening leave areas; this standard was not applied to the Gold Butterfly Project.

There are numerous clearcuts proposed for the Gold Butterfly Project. The revised draft ROD eliminated openings over 40 acres. However, neither the initial FEIS or the new FEIS addressed the standard that wildlife habitat in between openings needs to be considered in the location and design of any of the clearcuts. For example, the wildlife report notes that the Management Indicator Species (MIS) pine marten avoids using corridors between suitable habitat if they are less than 100 meters wide. Elk hiding cover requires a minimum of at least 600 feet in width (Black et al. 1976). Thus the design of clearcuts across the project area has to define how areas between clearcuts have included considerations for wildlife, at least for the 2 Forest MIS (pine marten and elk), and what tradeoffs were addressed if distances between clearcuts were going to be less than needed by wildlife. There is no analysis in any of the FEISs completed for this project that define what the width of leave areas between clearcuts will be, as compared to existing conditions. So the impact of this project on forested habitat between clearcuts was never addressed, even though this is a Forest Plan standard. For example, the analysis of elk impacts for the project never address how the availability of leave areas between clearcuts will be managed. For the pine marten analysis, this issue is also ignored, with the agency acknowledging only that pine marten habitat will be reduced by reductions in overhead canopy and reductions in downed woody debris; the analysis claims that movement through this landscape by marten will continue, though the likely reduction in connectivity was not actually assessed.

11. The agency failed to define how the project will adhere to the Forest Plan standards for old growth and openings within riparian areas, or MA 3b.

The Forest Plan FEIS at III-22 notes that 10% of the forest is riparian habitat. So it can be estimated that somewhere around 10% of the Gold Butterfly Project area is riparian habitat. However, the acres of riparian habitat, or MA 3b, are not quantified or mapped for the project area. In turn, the agency did not define what the level of old growth is within MA 3b. The Forest Plan standard for MA 3b is to maintain 50% old growth in fisheries riparian areas, and 25% old growth in nonfisheries riparian areas (Forest Plan III-24; Forest Plan ROD at 20). So the agency has not addressed how or if this Forest Plan standard is being met in the Gold Butterfly Project Area. The rationale for this failure was that these areas are being managed in conjunction with upland MAs. No Forest Plan amendment was completed to remove the requirement to maintain 25-50% old growth within the riparian habitats of the Gold Butterfly Project Area, in violation of the NFMA.

12. The agency failed to define how the standard for MA 3a for opening sizes will be met with project implementation.

The MA 3a standards include a requirement that openings generally be limited to 5-15 acres, unless larger sizes are needed to blend in with the surrounding landscape. These opening sizes will be important as well to meet the emphases of this MA, which include big game cover. The largest opening size to promote elk would be a circular opening of 26 acres, with no point further than 600 feet from cover (Black et al. 1976).

13. The agency failed to provide a valid rationale for eliminating the required size of old growth stands of 40 acres.

The agency concluded that the minimum required size for old growth stands was being eliminated because the Green et al. (2011) definitions for old growth do not include a minimum size (e.g., FSEIS at 8). However, there is no analysis in these Green definitions for old growth that address the size of old growth stands as per

their value to wildlife. Nor do any of the various Gold Butterfly NEPA documents address how sizes of old growth stands affect the two MIS for old growth, the pine marten and pileated woodpecker. No Forest Plan monitoring data was provided, as well, to demonstrate that blocks of old growth forests under 40 acres in size do not adversely impact associated MIS. As such, the NEPA analysis provided to justify the removal of a minimum size for old growth blocks does not meet the requirements of the NFMA for Forest Plan amendments.

Pfister et al. (2000) noted that "interior" old growth habitat, which is greater than 100 meters from an edge of an opening or stand of lesser age or a road, is the most important component of old growth habitat; fragmentation of existing old growth stands by logging or roads will decrease effectiveness of the patch as habitat due to the loss of interior old growth forest.

14. The agency provided a false definition of old growth to the public in the proposed amended definition as per Green et al. (2011), and then used this false definition of old growth as the basis for a lack of any analysis of how the amended old growth definition will impact wildlife.

The agency states that the Green et al. (2011) descriptions of old growth forests for western Montana are being substituted for the current old growth definitions in the Bitterroot Forest Plan. We agree that the Green et al. (2011) definitions of old growth are more specific to individual forest types, and thus provide a better description of old growth forests. These definitions were noted by Pfister et al. 2000 to represent the best guess for what old growth forests look like. One factor not included in the Green et al. (2011) definitions that is included in the current Forest Plan definition of old growth is canopy cover, which is to be 75% of the site potential. Agency claims that canopy cover cannot be measured with current procedures for mapping old growth is clearly invalid, as the R-1 VMap technology clearly includes a measure of canopy cover. For example, this R-1 VMap technology enables the identification of thermal cover, which requires a 70% canopy cover (see project DEIS at 95).

The agency claim that the Green et al. (2011) criteria for old growth are being applied to the Gold Butterfly Project area is false. Only a portion of the Green et al. (2011) old growth definitions are actually be applied to identify old growth in this project area. These are the minimum screening criteria for number of old trees per acre, age of old trees, and minimum basal area (see Table in 2 in Green et al. 2011). As is noted in the Green paper, these minimum criteria are to be used to "screen" for forest stands that may be old growth. The entire old growth forest descriptions include a number of additional characteristics that were also identified as characteristic of various old growth types. These include the amount of variation in tree sizes, the levels of dead, broken-topped trees, the probability of large downed woody material, the percent of decay in trees over 9 inches dbh, the number of canopy layers, and the number of snags over 9 inches dbh. All these characteristics are used to define old growth. The agency's use of only the screening criteria to define old growth means that actual old growth forests will not be managed for in the Gold Butterfly Project. The change allowed in old growth forests when the minimum screening criteria are used to define old growth are summarized in a Declaration by Dr. Sara Johnson, provided in Appendix B of this objection.

Pfister et al. (2000) noted that the minimum criteria identified by Green et al. (1992) are appropriate screening criteria for old growth because most stands that have these minimum criteria will also have most other definitions of old growth as well. They also emphasized that timber harvest within existing old growth forests should not be encouraged, and if done, needs to be justified on established prescriptions for developing old growth or to meet old growth maintenance objectives; they noted that harvesting in old growth stands should not occur unless such harvesting is a byproduct of a written ecological restoration silvicultural prescription with the primary purpose of restoring or maintaining old growth characteristics. This requirement is not met for the proposed treatments of old growth stands in the Gold Butterfly Project.

The purpose of logging old growth stands in the Gold Butterfly Project Area are summarized in the FSEIS at 20. These include addressing the vigor of old growth trees, reducing the potential for stand replacing fire, and reducing the susceptibility to bark beetles. These are the standard reasons for logging all the stands in the Gold Butterfly Project Area, and are not specific to old growth management. The Forest Plan at II-28 defines various purposes of managing timber, including reducing long-term losses due to insects and diseases, reducing the susceptibility of lodgepole pine to bark beetles, and do prescribed treatments in forest stands to reduce losses to dwarf mistletoe, and to reduce the incidence of western spruce budworm to prevent long-term damage in timber production areas.

Logging old growth stands to protect them from fire assumes that their value to wildlife will be destroyed if these stands burn, which is not accurate. Burned forests have high ecological values to wildlife (Hutto et al. 2016).

Logging old growth stands to prevent/reduce infestations of insects and disease is not a wildlife benefit, as these ecological processes are essential for wildlife, by creating both insects for forage and dead trees and logs for both foraging and nesting. At least 25% of forest birds depend upon dead trees for nesting and foraging (Bull et al. 1997). The Flathead National Forest identified 42 bird and 10 mammal species in Montana that are associated with snags and downed logs. Research in Montana also reported that an old growth species, the three-toed woodpecker (USDA 2018) nests in beetle-infested forest stands containing up to 70 larger snags per acre (Saab et al. 2012). Reducing dead trees in old growth stands via logging would not be a benefit to these 52 species.

Forest thinning is a standard practice to increase the growth of remaining trees. However, Green et al. (2011) does not include tree vigor as a characteristic of old growth. And recent research indicates that increased growth of lodgepole pine (Cooper et al. 2015) as well as whitebark pine trees (Six et al. 2021) increase the risk of attack by mountain pine beetles. More significantly, thinning old growth

stands to increase the growth of remaining trees means that values to many old growth-associated wildlife will be degraded or eliminated. These include the MIS pileated woodpecker. Research in Montana has demonstrated this species selects relatively undisturbed old forest stands as habitat (Hutto 1995). Research from Oregon provides the same conclusions, that pileated woodpeckers select dense forests as habitat (Bull et al. 1997). Research also indicates that this woodpecker feeds on bark beetles, and is not affected by beetle infestations of their habitat unless these areas are clearcut, which causes a significant reduction in pileated woodpecker densities (Bull et al. 2007).

Snags and downed logs are essential habitat features for the Forest MIS the pine marten. Downed logs are essential to provide winter foraging and resting sites for this MIS (Sherburne and Bissionette 1994). The structural complexity of forest stands provided by dead trees, including trees that are killed by insects and disease, have been identified as an important component for the pine marten in most of their habitat use (Chapin et al. (1997).

Forest thinning will not only reduce the short and long-term availability of snags and logs so crucial to many wildlife species, but it will also eliminate the thermal cover required by various species. The Guides for Elk Habitat Objectives (1978) address how forest thinning will remove thermal cover for elk. Forest thinning will also be detrimental for several forest owls that are old growth species, including the boreal owl (USDA 2018) and the great gray owl (Bull et al. 1988). Thermal cover is important to both the boreal and great gray owl to prevent heat stress, as well as to maintain fluffy snow conditions for effective snow-plunging hunting activities (Koshmrl 2013; Hayward 1997; Nero 1993; Bull et al. 1988). Forest thinning will also be detrimental to many forest songbirds due to the loss of thermal cover (Betts et al. 2017). This loss of thermal cover, along with forest complexity, may be why research in Montana identified 16 forest bird species that select relatively undisturbed older forest stands as habitat (Hutto 1995); 11 of these 16 species are old-growth associated birds (USDA 2018). And the Flathead National Forest summary of old growth-associated wildlife identified

their habitat selection as either "dense" or "open" for 21 of the 31 species identified. 11 of these species were identified as selecting "dense" old growth.

Recent research has also demonstrated that forest thinning creates adverse impacts to both the pine marten and threatened Canada lynx. Moriarty et al. (2016) found that the Pacific marten, the species noted to occur on the Bitterroot National Forest in the Gold Butterfly wildlife report, avoided stands with simplified forest structure, indicating that thinning treatments of either the overstory and/or understory of the forest may negatively affect the ability of pine marten to forage without increased risks of predation; fuel treatments that simplified forest structure negatively affected marten movements and habitat connectivity. As well, various forest silviculture treatments were reported to be avoided by the lynx for at least 10 years, with some avoidance effects lasting up to 40 years, or the time period cover by the study (Holbrook et al. 2018).

Noted in the various NEPA evaluations for the Gold Butterfly rationale to log old growth was that in some instances, these stands currently or in the future may no longer contain the minimum screening criteria identified in the Green et al. (2011) summaries of old growth. No references were ever provided as to how this has been determined. Those stands that were measured and found to no longer contain levels of these minimum screening criteria were not identified in any NEPA documents for the Gold Butterfly Project. The fact that beetle infestations will eliminate effective old growth for wildlife is pure conjecture, and is likely just a justification for logging old growth stands. On the Helena National Forest, research showed that an 80% mortality of lodgepole pine stands due to bark beetles only reduced the canopy cover by 8.5% on average; canopy cover was reduced from 77% down to 69% (Lowrey et all. 2020). And recovery of the canopy cover to previous pre-beetle infestation levels occurred within about 7 years. Id. Also, as is noted by Pfister et al. (2000), there are no exact numbers of big old trees that create old growth conditions. It is the characteristics of the entire stand that define its wildlife value to wildlife. This was more recently supported by Chapin et al. (1997), where they noted that forest stands that are below the actual age required for old growth can still provide high-quality habitat for the

pine marten, a species that is associated with old growth, due to the high structural complexity that has been created by beetle infestations.

The Gold Butterfly proposed amendment to only define old growth by the minimum screening criteria defined in Green et al. (2011) did not identify a single objective for wildlife in the proposed logging treatments. They also failed to cite any existing scientific wildlife recommendations that support logging old growth stands down to minimum screening criteria. The agency also failed to cite any monitoring results since the Forest Plan was implemented in 1987 that demonstrate the minimum screening criteria of Green et al. (2011) maintain habitat values and population levels for the 2 MIS old growth species, the pileated woodpecker and the pine marten.

15. The NEPA assessments for the Gold Butterfly Project do not address whether or not the current Forest Plan requirements for old growth have functioned to maintain viable, well-distributed populations of the old growth MIS, the pileated woodpecker and pine marten.

The Bitterroot National Forest has no monitoring data, as required since the Forest Plan was implemented in 1987, to ensure that management activities do not cause significant declines of the old growth MIS, the pileated woodpecker and pine marten. In spite of this lack of monitoring, the agency was silent on whether the miniscule requirements for old growth on the Forest, including within Mas 1, 2, 3a and 3b that occur in the project area, are sustaining the 2 MIS. There was no survey data collected for these MIS in the Gold Butterfly Project Area as well. The failure of the agency to consider the effectiveness of these old growth standards for the Gold Butterfly Project is curious as they are proposing amendments to this plan direction. Yet there was no consideration of amending the Forest Plan old growth direction to reflect the current best science. This includes maintaining 20-25% old growth for forest birds (Montana Partners in Flight 2000), maintaining 20% old growth for the forest raptor, the northern goshawk (Reynolds et al.

1992), and 25% old growth for the pileated woodpecker (Bull and Holthausen 1993).

16. The agency did not address where old growth stands occur in the project area, or what the long-range strategy is for stands that are proposed for treatment.

The proposed treatments in old growth, thinning, are never discussed in terms of the long-term management of these stands. Given that the treatments proposed for old growth are highly consistent with timber management objectives of harvesting existing timber values provided within old growth stands, the agency was silent on what happens to these stands after they are logged down to unnatural conditions, with as per forest habitat types, or for wildlife. There are no clear records of where these stands exist on a map, or a specific inventory of these treated stands. The agency did not provide any documentation that these treated old growth stands will not be logged again in the future, for additional timber production. It is possible that the proposed treatments in old growth stands is simply the first step in a planned progressive harvest of first the largest trees that currently exist, and subsequently, in 20 years or so, a subsequent harvest of those remaining trees that have increased to a suitable size for harvest. If these stands are truly being managed for old growth, the agency needs to provide a record for the long-term identification of these stands to ensure they will not be logged again. There is no such record in the Gold Butterfly NEPA documents.

17. The agency has provided the public misleading information by claiming that there will be no change to the requirements of old growth per MA, when in fact the final Record of Decision states that the MA old growth levels for Mas 2 and 3a will be changed; there is no analysis in the NEPA documents for the Gold Butterfly Project, including analysis of the proposed amendment, as to the effects of this proposed change in old growth levels in Mas 2 and 3a.

Throughout the NEPA documents for the proposed old growth amendment, the agency notes that the old growth levels in Mas 2 and 3a as identified in the Forest Plan will not be changed. These Forest Plan levels of required old growth are 8% for each of MA 2 and 3a. However, in the Final draft Record of Decision for the project, dated December 2021, states in Appendix B at page 4 where the proposed amendment to old growth is discussed, that the Management Area old growth levels for Mas 2 and 3a will be 3%, not the 8% identified in the Forest Plan. This is the only information ever provided in the Gold Butterfly NEPA documents, including information on the proposed old growth amendment, where it is stated that this change is planned. There is no analysis of how this change would affect wildlife. This would be a significant change in the current MA old growth direction for Mas 2 and 3a.

18. The proposed treatments in whitebark areas will violate the ESA because there is no currently-produced science that supports these treatments as beneficial to either whitebark pine or grizzly bears.

Whitebark pine nuts are available to grizzly bears because red squirrels cache these cones in their middens. Red squirrels depend upon dense, mixed conifer stands in the whitebark pine zone as habitat, and forest thinning will reduce their populations (Reinhart and Mattson 1990). Thus thinning whitebark pine forests will degrade habitat for the grizzly bear. Nor has any recent research identified the success of whitebark pine treatments in promoting regeneration. Keane and Parsons (2010) found that in nearly all of their study treatment sites for whitebark pine, few to no whitebark pine seedlings resulted; this research noted that severe site conditions at high elevations may have killed whitebark pine emerging seedling; some study sites had up to 50 feet of snow in some winters; the heavy snowpack may pull seedings out of the ground as this snowpack creeps down slope in the spring; they also noted that many soils are highly erosive and spring snow melts scoured the topsoil and washed away seedings roofed in it, especially

in recently burned sites; they noted that it may take up to 40 years for soil on disturbed sites to stabilize enough to allow whitebark pine seedlings to become established in upper subalpine zones. Leirfallom et al. (2015) also noted that intermediate amounts of vegetative cover were associated with increased whitebark pine seedling occurrence, indicating that the presence of some cover facilitated survival; whitebark pine appears to be more tolerant to exposure than other subalpine conifers, and is more likely to establish under partial-shade conditions; low vegetative cover, logs, fallen trees, branches and stumps can help protect seedlings from desiccation and cold exposure.

More recently, Six et al. (2021) reported that thinning whitebark pine trees to promote growth may increase their mortality risk to pine beetles, as well as will reduce the genetic diversity of the stand; diversity is important to long-term persistence. The authors noted that where silviculture practices are applied to whitebark pine stands, they should be implemented with considerable caution, including applying thinning prescriptions to increase growth. The standard management practice of thinning forests to increase their growth and vigor does not appear to benefit whitebark pine forests, but instead appears to increase their mortality risk to pine beetles. The authors concluded that the standard prescriptions for managing timber, using traditional spacing and age-class prescriptions, may not be an effective conservation strategy for whitebark pine.

19. The Forest Service is violating the Healthy Forest Restoration Act (HFRA) by implementing an invalid definition of the Wildland Urban Interface (WUI), and by triggering multiple Forest Plan violations.

The criteria for delineating the HFRA WUI are quite specific. These criteria have not been applied to the Gold Butterfly Project, with a large percentage of the project area not actually qualifying as the WUI. In addition, there are numerous Forest Plan violations planned for the Gold Butterfly Project, which are violations of the HFRA. As a result, this project cannot be implemented as currently planned under the HFRA.