



## **DECISION NOTICE: Calf Creek Wildlife Management Area Habitat Restoration Project**

Montana Fish, Wildlife & Parks  
Region 2  
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### **DESCRIPTION OF PROPOSED ACTION**

Montana Fish, Wildlife & Parks (FWP) proposes to conduct habitat restoration treatments on 1,116 acres of forest and grass/shrublands on the Calf Creek Wildlife Management Area (CCWMA), east of Hamilton in Ravalli County. If approved by the Montana Fish and Wildlife Commission, the work could begin as early as December 2021.

The objectives of the proposed treatments are to:

1. improve elk and deer winter forage,
2. restore grass/shrublands through conifer removal,
3. promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type, and
4. promote aspen growth and regeneration.

The treatments would involve the removal of conifer trees (both merchantable and submerchantable) through a combination of mechanical and non-mechanical treatments. Habitat restoration treatments include 689 acres of removing conifers that have expanded into grass/shrubland habitats and 427 acres of variable-density thinning of forest stands. Mechanized treatments would not occur during the general rifle season, along with efforts to minimize impacts during archery season (such as no logging on weekends). The purpose of this project is to improve wildlife habitat; this project would not be proposed if not for a need to conserve and improve wildlife habitat on the WMA.

Following this action, FWP anticipates that important ungulate winter-range condition would improve due to increased grass and woody browse recruitment. Habitat diversity would be expected to increase at the stand-level and across the larger landscape, providing habitat niches for a wide range of game and nongame wildlife. Treatment would also reduce the susceptibility of the treated area to high-intensity stand-replacement fire that would kill large overstory trees, damage thin organic soils, slow grass and woody browse recruitment, and pose a risk to neighboring landowners.

Costs to FWP for these forest habitat restoration treatments are expected to be partially offset by the sale of merchantable timber byproduct. FWP's appraisal of timber values, logging costs, and follow-up treatments resulted in an estimated cost of \$250,000. The actual cost will depend on the value of logs at the time of contract advertisement and other factors that vary over time. FWP would also pursue grant funding through various sources.

## **ALTERNATIVES**

Alternative A: No Action. If FWP decides not to proceed with the proposed action, grass/shrubland and forest restoration treatments on the Calf Creek WMA would not occur at this time. Elk and deer winter range would continue to experience conifer expansion and in-growth. Forest succession on the WMA would trend towards increasing canopy coverage, stressing water resources and shading out important grasses and deciduous vegetation. Aspen stands in the project area would continue to be stressed and outcompeted by conifers, with subsequent impacts to nongame wildlife use of the WMA.

Alternative B: Proposed Action. Conduct grass/shrubland and forest habitat improvement treatments on approximately 1,116 acres of the Calf Creek WMA. Following this action, FWP anticipates that important ungulate winter-range condition would improve due to increased grass and woody browse recruitment. Habitat diversity would be expected to increase at the stand level and across the larger landscape, providing habitat niches for a wide range of game and nongame wildlife.

## **PUBLIC REVIEW PROCESS**

Montana Fish, Wildlife & Parks is required by the Montana Environmental Policy Act (MEPA) to assess potential impacts of its proposed actions to the human and physical environments, evaluate those impacts through an interdisciplinary approach, including public input, and to make a decision based on this information. FWP released a draft environmental assessment (DEA) for public review of this proposal (Calf Creek Wildlife Management Area Habitat Restoration Project) on February 5 and accepted public comment for a minimum of 30 days until March 8 and later extended comment for an additional 16 days from April 15 to April 30, 2021.

Legal notice of the CCWMA Forest Habitat Restoration Project Draft EA (DEA) was published once each in the *Bitterroot Star* (Stevensville, Feb 10), *Independent Record* (Helena, Feb 10), *Missoulian* (Feb 10), and *Ravalli Republic* (Hamilton, Feb 10) newspapers. A statewide News Release announcing the project, its DEA, and opportunity for review was distributed February 19, 2021 to a standard list of media outlets interested in FWP issues. Another news release was issued April 7, announcing the April 16<sup>th</sup> field tour and the extended April 15-30 comment period.

FWP mailed 25 copies of the DEA and approximately 56 email notifications of the DEA's availability to adjacent landowners and interested individuals, groups and agencies. Additional notice of the field tour and extended comment period was mailed to 25 and emailed to 81 individuals, groups and agencies. The DEA was available for public review on FWP's web site (<http://fwp.mt.gov>, "Public Notices") from February 5 through March 8, 2021 and from April 15 through April 30, 2021. Comments could be submitted by mail or email to Region 2 FWP.

## **PUBLIC COMMENT**

### **Summary of Public Comment**

FWP received 28 comments during the public review period, 26 from individuals and 1 each from an agency (Montana Department of Natural Resources and Conservation [DNRC]) and an organization (Friends of the Bitterroot) and the). See Appendix A for all comments received. Individuals making

comment included 12 from Hamilton; 4 from Corvallis; one each from Victor, Belgrade, and Billings; and 7 did not specify a location.

Eight commenters supported the proposed action, 8 commenters opposed the proposed action, and 12 commenters did not specify support or opposition. Some of these comments asked for clarification on the project, to expand the public comment period, or offered suggestions. Comments received in support of the proposed action included [numbers in brackets refer to the Commenter # in the Appendix A]:

- “I believe the proposal is well intentioned, well written, and I am 100% in favor of the project as written.” [2.1]
- “Why not maximize the potential of this property for the use it was created for? I also think fire/fuel suppression is a good idea if controlled burns are not an option.” [4]
- “. . . I think you are on track to re-establish a grass and sagebrush ecosystem.” [8.1]
- “Looks like a justified project with concerns for a variety of species taken into account.” [16]
- “I am in support of this habitat restoration project for the Calf Creek WMA. Due to subdivision development creeping up to the [Bitterroot] National Forest boundary on the East side of the valley, elk and deer winter habitat continues to shrink. Calf Creek . . . was established to serve the needs of elk, deer and other wildlife. As such this use must take precedence over other uses. It’s important to note that the current landscape of the WMA is being restored to its historical condition in order to carry out the reason for its establishment.” [18.1]
- “We are very much in favor of this project as a forest fire would be devastating to these mountains and the resident wildlife population and vegetation.” [21.3]
- “We are hopeful this project will move forward to allow for a healthier forest via management and thinning.” [21.4]

## Response to Public Comment

The following summarized comments encompass specific issues, questions or suggestions received during the public comment period, along with FWP’s responses.

### Vegetation

*Comment V.1: The last sentence on page 4, the abbreviation (WSWB) seems incorrect. It should be WSBW (western spruce budworm). [1.1]*

FWP Response: Yes, this was a typo; the correct abbreviation is WSBW.

*Comment V.2: Dwarf mistletoe is mentioned in the Draft Environmental Assessment (DEA) but the proposal lacks details of the specific treatment regarding this disease. Dwarf mistletoe and other native insects and diseases should not be used as an excuse for logging [1.3, 1.4, 12a.4, 28.4]*

FWP Response: As stated in the DEA (page 4), Douglas-fir dwarf mistletoe is common in the project area. The caption for Figure 7 (page 8) also recognizes the importance of mistletoe-infected branches for providing habitat. Regarding treatment of mistletoe-infected trees, it is not one of the FWP’s objectives of this project to sanitize the forest of this disease but rather our objectives are to open up the canopies of some forested stands to allow more sunlight to reach the forest floor and promote understory growth of grasses, shrubs, forbs, and aspen as well as promoting stand conditions that will be more resilient to stand-replacement in the event of fire. As such, FWP proposes to thin stands to an average residual density of approximately 70 square-feet basal-area per acre (BA/ac), favoring trees in the dominant and codominant crown position as well as favoring more fire-resistant ponderosa pine. Inevitably, this will result in the removal of some trees infected with mistletoe, but presence of mistletoe will not be a significant factor in whether or not a tree will be

removed. Crown position, crown health, and species will be the primary factors in tree selection. Dwarf mistletoe infection is also more common in draws, on northerly aspects, and at higher elevations that are not within the boundaries of the proposed treatment units so the majority of infected trees will remain on the WMA.

Comment V.3: *The DEA uses the term “habitat type” but it is not defined or cited [5.3-5.9]*

FWP Response: FWP did err in not providing the habitat type and citing the source for the definition of habitat type, as it has done in past EAs. Habitat type for the forest stands is indeed referring to the *Forest habitat types of Montana* (Pfister et al. 1977). The most common forest habitat type in the project area is Douglas-fir/common snowberry. The bluebunch wheatgrass phase is common at the lower elevations, and the pinegrass phase is typical at the mid-elevations. FWP did not determine the habitat type for the grasslands and shrublands but “habitat type” for these vegetation systems would be referring to *Grassland and shrubland habitat types of western Montana* (Mueggler and Stewart 1980).

Comment V.4: *Promoting aspen is stated as a goal but the proposal lacks details of the specific treatment. FWP may be unsuccessful in achieving this objective due to a variety of factors such as browse and scarcity of water [5.11, 11a.8, 22b.12, 25e.1]*

FWP Response: FWP did not elaborate on the need to promote aspen because it has been identified in other plans (e.g. *Calf Creek WMA Management Plan*<sup>1</sup>; *Montana Fish, Wildlife & Parks Forest Management Plan*<sup>2</sup>; *The Montana Statewide Elk Management Plan*<sup>3</sup>; and *Montana State Wildlife Action Plan*<sup>4</sup>) as a species that FWP desires to promote. FWP did err in not mentioning in the Project Overview that conifers have expanded into and overtaken many aspen clones within the project area. Aspen clones comprise a relatively small acreage of the overall project and the extent of individual clones tends to be relatively small (typically less than one acre), so FWP did not map the occurrence of aspen in the project area. As stated in the DEA (page 12), the proposed treatment will be to remove the majority of the live conifers where aspen occurs. Quaking aspen is not tolerant to shade (Perala 1990) and we anticipate that the existing aspen will benefit from the removal of shade from the conifers that have expanded into the aspen stands. Also, as stated on page 13 of the DEA, broadcast burning may be used to promote aspen regeneration. Fire can increase sprouting of aspen (DeByle 1985). FWP does not propose to protect aspen from deer and elk browse, but to stimulate sprouting so that there is more available for deer, elk, and a variety of other species to utilize.

Comment V.5: *What areas need thinned or cleared? The grass/shrubland restoration and forest restoration treatments are not mapped. It appears some units spill over onto northerly aspects but it may not make sense ecologically to remove trees from those aspects. Does it include the old orchard up in the higher part of the refuge? [5.10, 6.1, 10b.6]*

FWP Response: The Figure 2 map (DEA, page 3) shows the proposed treatment units. A revised map showing the units by treatment type is attached to this DN as Appendix B. We have also included tables showing the proposed treatment for each unit as well as road work information (Appendix C of this DN, Tables C1 and C2). The *Ecological Setting* section in the *Project Overview* section of the DEA (pages 4 through 8), provides a discussion of need for this work, which is primarily due to an increase in conifer expansion and in-growth over the past 80 years, which has decreased the coverage of understory grasses, forbs and shrubs, and thus decreasing the forage availability for deer and elk. In some cases, formerly grass/shrubland dominated habitats occurred on northerly aspects as well, so treatment may be applied to those areas if

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<sup>1</sup> Available upon request from Region 2 FWP (Missoula) office.

<sup>2</sup> Available upon request from FWP Wildlife (Helena) office.

<sup>3</sup> Available upon request from FWP Wildlife (Helena) office.

<sup>4</sup> Available on FWP's website at <https://fwp.mt.gov/conservation/wildlife-management/nongame-wildlife>

there is evidence that it aligns with the objectives of the project. Removal of conifers would occur within the old apple orchard but none of the apple trees would be cut.

*Comment V.6: Organic materials, such as tree stems, should not be removed from the site [8.3-8.4, 9.1]*

**FWP Response:** Due to the substantial number of comments regarding the use of mechanized removal, FWP reviewed the proposed units and decided to change 716 acres of the project to non-mechanized treatment only. As such, non-mechanized treatment will result in lop and scatter, pile and burn, and girdling of some trees that would have otherwise been removed, thus leaving more organic material on site. In the units where mechanized treatments will be implemented, merchantable material (i.e., logs) will be removed from the site. There are several reasons why FWP proposes to remove trees from the site. The primary reason is that not doing so would greatly increase the amount of dead fuel on the ground, which could result in higher fire severity and would be the opposite of one of our objectives, “to promote a condition that would allow fire to burn at a low severity.” Another reason is that leaving the boles of trees would attract bark beetles, especially Douglas-fir beetle and pine engraver, which would threaten the remaining live trees on the WMA. The third reason is that due to the xeric nature of the site and soil types (e.g., Mollisols) in the grasslands and shrublands, the woody material would take decades to decompose. The proliferation of conifers that have expanded into the grasslands and shrublands are in part due to fire exclusion, which has resulted in a departure from the historical range of variability (HRV). Therefore, leaving the material to decay in the grasslands would perpetuate a departure from the HRV. A fourth reason is that leaving material on site could hinder movement of wildlife (including elk) through the area and reduce the amount of forage that would otherwise grow in thinned stands. Lastly, due to limited funding, it is more economical to utilize the trees that can be sold to forest-products manufacturing facilities to help offset the costs of the treatments.

*Comment V.7: The mechanized treatment and commercial logging portion of the project should be removed from the proposal. Treatment should be limited to only small diameter trees. Conifer removal should be accomplished through non-commercial treatments such as hand cutting, girdling, piling, and burning. [10b.2, 10b.6, 10c.1, 10c.7-8, 12a.3, 12b.6-7, 12b.10, 15b.11-12, 20, 22a, 22b.11-12, 22b.11, 22b.14, 23.2, 23.6, 24.2, 25.1, 25.3, 28.3, 28.9]*

**FWP Response:** As stated in the response to Comment V.6, FWP removed 716 acres from the initially proposed mechanized treatment; therefore, commercial removal would not occur in those areas (Appendix B). FWP included mechanical treatments and commercial logging in the proposed action because many of the larger trees need to be removed in order to meet the project objectives, and it would be difficult, dangerous, and costly to remove those trees by non-mechanized methods. Also, the project is estimated to cost \$250,000 to implement. That cost estimate is assuming the sale of merchantable forest byproducts so commercial logging makes the project more economically feasible.

*Comment V.8: FWP’s use of the 1954 air photo as a baseline to show that conifers have expanded into grasslands is misleading. The conditions shown in the 1954 air photo could have resulted from many different factors including logging, grazing, farming, climatic factors, and/or stand-replacement wildfire. The project description contains no reference to records which indicate the project area ever contained more grassland than it now contains. [10a.3, 11a.4, 11b.18, 11b.24, 20]*

**FWP Response:** The 1954 and 2017 aerial images were intended to depict a snapshot in time of how the forests and grass/shrublands have changed over the past approximately 60 years. FWP should have done a better job at explaining that “past timber management, fire exclusion, and forest succession” over the past approximately 110 years has resulted in a departure from historic conditions. Aerial imagery only goes back to approximately 1930, but it is well documented that forest conditions have changed substantially in terms of composition, tree density, and size structure from the typical conditions believed to have existed prior to European settlement (Leiberg 1899, Gruell 1983). FWP does not contend that stand replacement fire did not exist, and we should have

better explained that it historically occurred at long intervals. Fire history studies on the Bitterroot and Lolo National Forests indicate an average fire frequency of approximately 5 to 25 years with infrequent stand replacement fires occurring approximately every 150 to 400 or more years (Arno et al. 1995). Also, through field reconnaissance, we found there to be little evidence of there ever being a mature forest (i.e., old stumps, mature trees, snags) in the areas proposed for grassland restoration treatments.

*Comment V.9: No peer-reviewed research or scientific evidence is cited that substantiates claims that this project would restore historic forest characteristics. The DEA makes the assumption that logging/thinning will produce a more desirable forest but it is not based on the latest research [11a.14, 11b.19]*

FWP Response: FWP did err in not providing more detail in how it would develop silvicultural prescriptions for the forest treatment units. FWP would use the “individual, clumps, and openings” (ICO) approach, which has been shown to restore historic forest characteristics (Clyatt et al. 2015) and increase ecological resilience, function, and process (Churchill et al. 2018).

*Comment V.10: FWP does not provide data or evidence that fires historically burned frequently (every 5 to 50 years) and that fire exclusion is the primary reason for conifer expansion. There is disagreement in fire history data and in the scientific literature that fire burned frequently in the sagebrush and ponderosa pine habitats of the CCWMA. [11a.6-7, 11b.14-16, 11b.18, 20]*

FWP Response: Hundreds of published articles document the historical fire regime in Northern Rocky Mountain ponderosa pine forest ecosystems. Most studies found that prior to fire exclusion, low to moderate-severity fires burned frequently (every 5 to 50 years), as stated in the DEA. The US Forest Service’s Fire Effects Information System website<sup>5</sup> is a good source of information regarding this topic. (While the historical role of fire in ponderosa pine communities is clear because it is easy to reconstruct the fire history based on fire scars, it is less clear in sagebrush-grassland communities because fire does not leave scars on sagebrush and correlating fire return intervals from adjacent forest stands to sagebrush-grasslands is complicated (Baker 2006). Coarse-scale studies indicate fire return intervals in mountain big sagebrush ranging from decades to centuries; however, fine-scale variability of soils and topography result in similar fine-scale mosaics of fire regimes. While there is disagreement in the literature about the historical fire regime in sagebrush-grassland communities, there is evidence that conifer expansion into sagebrush-grasslands has occurred due to the long-term suppression of fire (Arno and Gruell 1983, 1986; Hadley 1999, Foster and Shaff 2003).

Furthermore, fire occurrence at the project level and National Forest level from 1986 to present shows that fire starts continue to be a frequent occurrence on the landscape (see Appendix D for illustrative maps). Rapid initial attack has been effective in containing most fires that would otherwise would have burned larger areas (Neuenschwander et al. 2000, National Interagency Fire Center 2002); therefore, fire exclusion continues to play a role in perpetuating conifer expansion. Due to the lack of clarity regarding the precise reasoning behind fire intervals and conifer expansion in the sagebrush-grassland habitat, FWP’s claim that conifer expansion is “primarily in response to fire exclusion” is somewhat misleading, and we should have also acknowledged the importance of other factors including past livestock grazing, agriculture, climate. Regardless, as found by Heyerdahl et al. 2006, in the continued absence of fire, mountain big sagebrush and grasslands in southwestern Montana are likely to become more homogeneous as conifers continue to encroach. Backed by substantive scientific research, FWP still asserts that fire exclusion is an important, if not the most important, factor influencing conifer expansion on the CCWMA.

*Comment V.11: FWP does not need to remove young conifers from grasslands areas because there is little evidence that conifers are continuing to regenerate in those areas due to climate change and doing so would be a waste of limited resources [11b.27-28, 11c.11, 20]*

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<sup>5</sup> Available at <https://www.feis-crs.org/feis/>. Rocky Mountain ponderosa pine forest information is at [https://www.fs.fed.us/database/feis/fire\\_regimes/Northern\\_RM\\_ponderosa\\_pine/all.html#69](https://www.fs.fed.us/database/feis/fire_regimes/Northern_RM_ponderosa_pine/all.html#69) Both accessed 30 May 2021.

FWP Response: FWP field reconnaissance and comparisons of historical aerial photos show relatively recent conifer expansion has occurred on the CCWMA. The majority of these trees are now 45 to 60 years old and have developed thick bark and are now more fire resistant. The tree crowns have expanded, resulting in the site becoming more shaded. This has decreased the coverage of shade-intolerant species such as sagebrush and bunchgrasses. This shading has also created favorable microsites for conifer regeneration and conversion of the understory from sagebrush and bunchgrasses to pinegrass and snowberry. This is evident nearer to the edge of mature forest stands but it is steadily increasing further downslope. As stated in the DEA (Ecological Setting, page 4), “forest succession towards mid-seral, closed-canopy stage reduces plant diversity and abundance, thereby reducing forage available to wildlife species. If left unchecked, conifer expansion could impact big game populations along with other wildlife species such as songbirds and small mammals.” FWP has been directed through statute and by priorities identified in various management plans (see DEA, Agency authority for proposed action, page 9) to use its limited resources to implement habitat management, such as this proposed project, on the CCWMA.

*Comment V.12: There is little evidence that thinning will reduce fire severity. There is disagreement in the scientific literature that dense forests are susceptible to high severity fire and that reducing fire severity is necessary [11a.6-7, 11a.15, 11b.18, 11b.37, 20]*

FWP Response: FWP is statutorily mandated to implement forest management to address fire hazard mitigation, under § 87-1-201(9)(a)(iv), Montana Code Annotated (MCA). There is substantial evidence that the variable density thinning and prescribed burning, as proposed in the DEA, are effective in modifying fire behavior. Variable density thinning has been shown to reduce the probability of crown fire spread, create patterns that result in patchy surface fuel loadings, in turn creating more variable fire behavior and burn patterns, and that openings can act as mini fire breaks to stop crown fire (Miller and Urban 2000, Knapp et al. 2006, Symons et al. 2008, Alexander and Cruz 2011, Bigelow and North 2012, Safford et al. 2012, Contreras et al. 2012, 2013, Kennedy and Johnson 2014, Lydersen et al. 2015, Ziegler et al. 2017, Parsons et al. 2017)

*Comment V.13: Disturbance by heavy machinery will spread invasive weeds (such as knapweed and cheatgrass) throughout the WMA. Focusing on providing wildlife habitat, especially for elk, can best be accomplished by focusing on simple, low-cost activities that improve the existing grassland on the MA (i.e. control/eradication of the two most prevalent invasive plants, spotted knapweed and cheatgrass). [9, 10b.1-3, 10c.2, 10c.9, 11a.5, 11b.26, 11b.28, 11b.29, 11b.36, 11b.40, 11b.47, 11c.15, 11c.17, 12b.3, 12b.6, 12b.11, 15b.3, 15b.4, 15b.10, 15b.13, 17.3, 19.2, 20, 22b.7, 23.3, 23.7, 25.1, 25.3, 27.3, 28.2, 28.5, 28.6]*

FWP Response: Weeds are an ongoing concern for FWP on this and many other WMAs. Spotted knapweed and cheatgrass have invaded many areas of western Montana and are extremely difficult to eradicate. Weed treatment is part of annual WMA maintenance and not subject to environmental assessments and public comment. FWP routinely seeks internal and external funding to accomplish weed control activities outside of normal maintenance. Biocontrol (knapweed root weevil) has been used on the WMA as recently as 2018, but many areas are still heavily infested with knapweed. In part, because of the risk of spreading weeds, FWP has reduced the acreage of mechanical thinning (see responses to Comment V.6 and V.7), especially in grassland restoration units that are infested with knapweed. The remaining mechanical thinning units are in forested areas with less knapweed coverage.

The need for ongoing weed treatment, however, does not preclude the need to reduce conifers with the goal of maintaining/improving forage availability in grasslands, shrublands, and forest understory. Despite the presence of knapweed, elk still utilize open areas for foraging, particularly in winter and spring, because of the presence of important forage plants and the fact that these areas are kept free of snow due to solar radiation and wind, and are the first areas to green up in spring. Grasses are

consistently the most important component of winter elk diets (Christianson and Creel 2010). Elk are frequently observed on the open slopes of CCWMA during winter and spring.

The proposed action in the DEA (pages 11-15) describes the actions that would be taken to minimize further weed spread including requiring that all equipment be washed and inspected prior to entering the CCWMA, operations would be conducted under dry, frozen or snow covered conditions to minimize soil disturbance, exposed soils would be reseeded, and weed infestations would be treated with herbicides.

*Comment V.14: Remove the non-native Siberian pea shrubs and consider planting natives in their place [12b.2]*

FWP Response: Thank you for your comment; FWP may consider this under a separate project.

*Comment V.15: Do not use chemicals to treat weeds. [20, 28.10]*

FWP Response: Chemicals are a valuable tool in integrated pest management (IPM) for the control of noxious weeds when they can be used effectively, with minimal impact to streams and desirable plant species. Chemicals are applied responsibly by trained and licensed personnel in accordance with label requirements. However, FWP also recognizes the benefits of all IPM tools including prevention, biocontrol, and other cultural treatments (e.g., digging, cutting, pulling) and utilizes these methods when and where appropriate.

*Comment V.16: Burning (both wildfire and prescribed burning) would be okay. Prescribed burns should be avoided in the spring and protections should be implemented for the sagebrush and old ponderosa pines. [10c.12, 14.3-5, 15b.13, 20]*

FWP Response: Thank you for your comment. Burn plans would be developed in coordination with agencies that have expertise in using prescribed fire, such as the U.S. Forest Service and Montana Department of Natural Resources and Conservation and/or qualified contractors. Prescribed burn plans would take into account protections for desirable vegetation and wildlife species while also considering the risk of ignitions during favorable weather and fuels conditions. Oftentimes, early spring or fall seasons present ideal weather and fuels conditions for prescribed burning. FWP would defer to the organizations with expertise in this arena, so long as reasonable precautions are taken to protect the resources which FWP is attempting to promote. Allowing wildfire to burn on the CCWMA for resource benefit could be considered through separate coordination with fire agencies responsible for fire protection but is outside the scope of this proposal.

*Comment V.17: FWP should consider an alternative to allow for natural succession to occur. Humans lack the insight to understand how their management impacts the ecosystem as a whole (such as microbial biodiversity) and it is best to observe and study rather than to interfere with nature. [11b.20-21, 11c.16]*

FWP Response: A no-action alternative was developed and considered by FWP. Selection of the no-action alternative would not eliminate ongoing management activities from occurring. Developing an alternative to allow “natural succession” is outside the scope of this project and in many ways would not be possible due to the need for invasive species management and fire suppression, as well as considering the potential effects of climate change.

#### Soils

*Comment S.1: Use of heavy equipment would disturb and damage soils. [8.5, 10b.2, 10c.9, 12b.1, 14.2, 15b.11, 19.2, 20]*



FWP Response: FWP would require contractors hired to do this work to abide by Montana Forestry Best Management Practices<sup>6</sup> (BMPs) and off-road activities would be limited to periods of relatively dry or frozen conditions. As stated in the DEA (page 16), by following these resource protection measures FWP expects soil impacts to be minor.

### Fisheries

*Comment F.1: Bull trout are protected by the Endangered Species Act. Please explain how this project will be within the laws that protect bull trout. Has dialogue concerning bull trout been initiated with the US Federal Wildlife Service? Locations of prescribed burns should also be analyzed for effects to streams and bull trout. Are there spawning areas in the project area? Is the project area home to critical habitat? [15b.8, 28.5]*

FWP Response: Based on fisheries surveys, it is unlikely bull trout are present in any streams on the CCWMA. Sampling in Willow Creek suggests the species currently occupies about 2.5 miles of spawning and rearing habitat in the mainstem of the creek from near the Eastman Creek confluence on the downstream end to about 1.5 miles above the Willow Creek trailhead on the upper end. The occupied habitat is mostly upstream of where the WMA tributaries meet Willow Creek. Willow Creek is not designated as Critical Habitat by the US Fish & Wildlife Service (USFWS), nor are any of the tributaries on the WMA. Given the changes to the proposed project that will limit road work and mechanical harvest in many areas, and because the project will be following Montana Stream Management Zone (SMZ) rules and stream crossing BMPs, it is unlikely there would be measurable fisheries impacts from the project, nor should it cause any take of bull trout as defined by the USFWS.

### Roads, Recreation, and Access

*Comment R.1: Please extend the public comment period. The announcement and comment period are not conducive to adequate review because the [WMA] is closed to the public during this time period. [5.2, 10a.1, 10a.5, 12a.2, 13a, 14.1, 14.6, 22a]*

FWP Response: FWP extended the comment period an additional two weeks, from April 15 to April 30, 2021, and conducted a field tour on April 16. The WMA opened to the public at noon on April 15. Due to COVID-19 concerns, attendance on the tour was limited to 15 participants who were asked to reserve a spot. Eleven people attended the field tour.

*Comment R.2: How will the project area be accessed? Does it include putting roads and skid roads into the area? What discussions has FWP had with the Bitterroot National Forest (BNF) about collaboration and using roads that connect through the CCWMA to U.S. Forest Service lands for the Gold-Butterfly Project? Do not allow log hauling through CCWMA from BNF. [6.1, 7a, 10c.4, 11b.42-43, 11b.48, 15b.15, 20, 22b.9, 28.8]*

FWP Response: Most of the project will be accessed from Hamilton Heights road and existing roads within the WMA. Some units south of Calf Creek may be accessed from neighboring private land, although at the time of issuing this Decision Notice, no formal access agreement has been made. Areas between Gibbons Creek and Eastman Creek may be accessed through U.S. Forest Service lands east of the CCWMA, although at the time of issuing this DN, no formal request for access has been made. The roads that will be used to access the project area are shown on Figure 2 (DEA, page 3) and the revised Figure 2 (Appendix B of this DN) and the unit and road tables (Appendix D). The DEA (General Guidance, pages 14-15; also section II.1.A, page 16) include descriptions of the type of road work that would occur. Logging equipment, including skidders, would operate off roads and would create new skid trails. FWP would require contractors hired to do this work to comply with Montana Forestry Best Management Practices (BMPs) when conducting these activities.

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<sup>6</sup> Available upon request from FWP Wildlife (Helena) office.

FWP attended several of the Bitterroot National Forest's (BNF) interdisciplinary team (IDT) meetings early in their process of developing the Gold-Butterfly Project. The BNF inquired about access through the CCWMA at that time. During development of the Gold-Butterfly Project, the BNF requested temporary road access for administrative use, including timber sale activities, of approximately 950 feet of existing road through the CCWMA in Section 16, Township 6 North, Range 19 West (Appendix B, see road labeled "H1"). In December 2019, FWP authorized a temporary road use permit to the BNF for this segment of road.

*Comment R.3: Will it involve a partial or complete closure of Calf Creek? What periods of time will Calf Creek be closed to hikers and hunters? What is the overall schedule including reclamation activities? [6.1, 7a, 17.6, 28.7]*

FWP Response: Short segments of trail may be closed if operations occur during the summer/fall (July 1 to mid-Oct). The segments closed would only be closed for a short period, and only during active operations (daytime), perhaps for a week or two as the equipment moves through various portions of the project. Otherwise, trail users should be able to access most of the WMA during its open period (April 15 to December 1), except for short segments of trail where equipment is actively operating. Depending on funding availability, the project may be able to start in the late summer/early fall of 2021. Funding may not be available for up to 1-5 years from now, so the project may be delayed for several years. Once operations get going, FWP expects most of the work would take 1-2 operating seasons, so it is possible that short trail closures could occur in successive years. The proposed reclamation activities are described in the proposed action (DEA, pages 11-15). Some activities, such as reseeding, would occur immediately or the first season following completion of the mechanical treatments. Other follow-up activities, such as prescribed burning, could occur for several years following the completion of the mechanical treatments. Monitoring and weed management would occur indefinitely.

*Comment R.4: Reopening over 10 miles of roads will degrade...the experience for the many local residents who value the CCWMA for quiet recreation. ....Recreation...is an important use. [10c.3, 10c.13, 12a.5, 12a.6, 12b.4, 12b.11, 15b.2, 15b.10, 20, 22b.3, 22b.8, 23.6, 24, 25.2, 26, 27.4, 28.5, 28.9]*

FWP Response: As stated in the DEA,

Calf Creek WMA was originally purchased . . . with Federal Aid in Wildlife Restoration monies administered by the US Fish and Wildlife Service under the authority of the Pittman-Robertson Act (P-R). FWP uses budgeted license revenues and P-R matching funds, within spending authority granted each biennium by the Montana legislature, for maintenance of the CCWMA. . . . The primary management goal, as stated in the Calf Creek WMA Management Plan, is to provide habitat for a diversity of wildlife species and populations, with an emphasis on elk winter range. (Agency Authorization for Proposed Action, page 9).

The focus on big game habitat recognizes the history and funding sources of the WMA. We acknowledge that CCMWA has become a popular recreation destination for non-hunting user groups, but unlike e.g., Forest Service lands, WMAs are neither intended nor mandated to provide recreational opportunities except hunting. The goal of this project is to improve habitat for big game. However, as noted in previous responses and based on public comment, the project will be modified to reduce the acreage treated with mechanized equipment and a corresponding decrease in 3.1 miles of roads will be used for log hauling. These steps will reduce impacts to roads currently used by the public for recreation.

*Comment R.5: When you "found" a loophole in the rules that allowed us access to the entire area before May 15<sup>th</sup> so that you would not have to extend the comment period, it shed doubt on the claim that the elk come first. [10c.3] Keep the whole WMA closed until May! [12b.5, 22b.14]*

FWP Response: FWP apologizes for the misunderstanding regarding the "early open" use rules. Region 2 staff understood that the early (April 15) opening of the WMA came with restrictions

regarding the daily time period (open only from noon-dusk), prohibition of dogs, and only a western portion of the WMA being open to the public. These restrictions were intended to minimize disturbance to wintering wildlife. The intent of the field tour on April 16 was partly to show participants examples of treatment areas, both inside and outside the “open” portion of WMA, making an exception to the rule in order that interested parties might be able to access these areas, accompanied by FWP staff. On the same day, an examination of the WMA (Biennial) Public Use Rules<sup>7</sup> adopted by the Fish and Wildlife Commission (Commission) revealed that these early-opening restrictions were no longer in effect at CCWMA, and likely had not been for a several years. This discovery, while concurrent with the extended comment period for this proposal, was completely separate from the proposed habitat restoration project.

The WMA’s early open period (April 15-May 14) is subject to change, pending FWP staff recommendation and Commission approval, which would involve a separate opportunity for public review and comment. FWP plans to consider moving the CCWMA open date to May 15, in line with other WMAs that include important winter range.

*Comment R.6: Re-opening roads and hauling logs will cause erosion and dump sediment into streams that flow into Willow Creek, a sediment impaired stream that is home to threatened bull trout. One of the haul roads to be re-opened parallels Gibbons Creek. There are places where sloughing and road failures have narrowed the road to less than 9 feet in width. There is little space between the edge of the road prism and the stream. Please check into Montana Streamside Management Zone (SMZ) laws to make sure you are not violating these regulations and consult with DNRC concerning this matter. [10c.3, 10c.13, 12c.2, 14.2, 15b.7, 19.2, 20, 28.5]*

FWP Response: Based on public comment, FWP is proposing to modify the project to reduce the length of haul roads from 10.2 to 7.1 miles. The road paralleling Gibbons Creek (as shown in Figure 2 in Appendix B and the tables in Appendix C) would not be used for log hauling and would not be improved except perhaps for minor brushing to facilitate administrative use. There are other short sections where haul roads approach streams, including one road that crosses Calf Creek. All haul roads would be improved and maintained in accordance with the SMZ laws and BMPs to minimize impacts to streams.

*Comment R.7: Increased public use, erosion of trails, and new trails are a concern. FWP should consider reclaiming some of the old roads. Opening roads could increase the potential for illegal OHV access. [10c.13, 14.2, 15b.10, 17.4, 20, 23.7]*

FWP Response: Many trails on the CCWMA are user created and maintained, and some are maintained through an agreement with the Bitter Root Back Country Horseman. FWP would improve and maintain log hauling roads by constructing drainage features such as dips and waterbars in order to minimize erosion. Trail maintenance is outside the scope of this project but FWP may consider trail management actions through a separate process. FWP would maintain existing road closures to prevent unauthorized road use. FWP works with our game wardens, as well as U.S. Forest Service law enforcement officers and occasionally law enforcement officers from other agencies, to handle illegal activities, including illegal OHV use.

## Wildlife

*Comment W.1: There is no evidence elk and deer are suffering from a lack of food on the CCWMA, or the grasses and shrubs would show signs of being over grazed...the population is well within the carrying capacity. Ungulate scat, though widespread, is infrequent over the entire WMA. [11c.12-14, 15b.6] There is no peer-reviewed or scientific evidence that this project would improve ungulate habitat conditions. [11a.13, 20, 22b.5]*

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<sup>7</sup> Available on FWP’s webpage <https://fwp.mt.gov/conservation/wildlife-management-areas> (Public Use tab). Accessed 30 May 2021.

FWP Response: Maintaining and improving forage for wildlife (especially big game) is an ongoing goal for WMA management. Big game management requires a combination of population and habitat management, with the goal of maintaining populations below the carrying capacity of their habitat and/or below the tolerance level of adjacent private landowners. The current status of the hunting district (HD) 261 elk population, as of spring 2021 aerial flights, is within the Fish and Wildlife Commission-adopted population objectives (which are largely based on social tolerance); however, elk that use CCWMA during parts of the year are also responsible for game damage to adjacent agricultural areas, including hayfields and haystacks. In the absence of natural disturbance that would reset succession to early stages preferred by many ungulates, management actions such as reducing canopy cover can boost understory forage production. Without such measures, assuming no natural disturbances, carrying capacity would gradually decrease, exacerbating game damage on private lands and likely causing shifts in ungulate use. Thus, even if the current condition of the WMA supports its resident elk population, it is not guaranteed to do so, with the many unknowns surrounding future environmental conditions.

The goal of Calf Creek WMA is to ensure quality habitat for wintering ungulates and minimize impacts to neighboring agricultural operations. Ungulate distribution at any moment in time is affected by a wide variety of factors, including macro- and microhabitat, weather, winter severity, competition, and both human and non-human predation risk (Proffitt et al. 2013). It is widely accepted that while elk may use dense stands for bedding or hiding cover, they require early-seral successional stages and edge habitats for foraging (including grasslands, shrublands, and open-canopy timberlands), and exhibit decreased foraging in closed-canopy systems due to lack of food and greater energy expenditure while foraging (e.g., Marcum 1975, Lyon and Jensen 1980, Cook et al. 2016). There is ample scientific evidence that cutting or thinning forest stands increases understory forage production (see list in Toweill and Ward 2002, page 564). Most negative effects to elk habitat following logging operations are due to increased motorized public access via logging roads (Marcum 1975, 1976), which will not occur on CCWMA as, in addition to being closed to the public during the winter, public access is walk-in only.

Ideally, management activities on CCMWA would not just maintain but increase big game (particularly elk) use and abundance on the property while supporting populations of mule deer, white-tailed deer, moose, and other game and nongame species. It is therefore incumbent upon managers to continually work toward optimizing available forage, balancing populations with habitat requirements and social tolerance, and preventing overgrazing from occurring in the first place.

*Comment W.2: The first objective, “improve elk and deer winter forage”, cannot be met...as the project is proposed to take place beginning in December 2021, the very time elk and deer are presumed to be foraging in the project areas. Project activity...would drive elk and deer from the area. [11a.3]*

FWP Response: Timing of proposed activities will be dependent on funding and winter conditions. Some activities may not occur during the winter. Operating machinery when the ground is frozen is less impactful to soil and vegetation, but CCWMA, owing to its relatively low elevation and sunny slopes, may not provide optimal winter operating conditions. When winter work is possible and planned, impacts to wildlife are expected to be temporary (Toweill and Ward 2002) and mitigated by adequate availability of security cover in the form of undisturbed forest stands (Edge and Marcum 1985). However, anecdotal evidence suggests that logging operations do not necessarily preclude elk use of winter habitat; for example, several mature bull elk were observed feeding within a quarter mile of working equipment in the BNF Meadow-Vapor project area. It is thought wildlife may capitalize on food sources provided by slash piles, such as previously inaccessible mosses and lichens, though there are not much data on the subject.

*Comment W.3: The forested areas have less weeds and more native grasses offering great forage for elk. The forests provide important thermal and hiding cover for a host of animals. [15b.3] Please analyze the effects of the proposed management activities on all wildlife in the area. [15b.6]*

FWP Response: FWP maintains that providing a mosaic of forest stands of varying age/density across the WMA will benefit the greatest number of species. It is true that cover is important for wildlife, including elk; however, hiding cover must not be prioritized at the expense of forage. The goal of this project is to expand grassland and pine savannah habitats, which have become overgrown with conifers and provide less high-quality forage for ungulates, while enhancing deciduous growth in riparian areas and preserving pockets of dense coniferous forest. Most of the thicker, north-facing stands will be left intact. It is well known that elk avoid closed-canopy forest systems for foraging, as many high-quality plant species are not adapted to shade (see response to Comment W.1). The DEA (pages 20-21) included analysis of effects to wildlife including nongame, sensitive, and threatened and endangered species, with some minor effects described and addressed.

*Comment W.4: How will the effects of all this activity and expense be evaluated, re: wildlife, vegetation, etc.? Will there be any before and after data collected?*

FWP Response: FWP personnel have collected numerous photographs of vegetative conditions before treatment, with plans to establish photo points that will be revisited and compared over time. Additionally, the elk herd in the area is counted annually in the spring (late March-early April), with data collected on location, herd size, composition, and calf recruitment. Game damage complaints on adjacent private lands are also documented.

#### Other Comments

*Comment O.1: FWP's analysis should conform with NEPA requirements. This project's environmental effects should be analyzed together with the adjacent, huge [Bitterroot National Forest] Gold-Butterfly timber project. The DEA should analyze the cumulative effects past, present, and reasonably foreseeable future actions [11a.16, 11b.41-43, 11b.46, 12b.9, 15b.8, 15b.9, 15b.15, 20, 22b.9, 22b.10, 23.5, 28.8]*

FWP Response: FWP is a state agency and therefore is required to follow the directives of the Montana Environmental Policy Act (MEPA, § 75-1-201 et seq., MCA). The Gold-Butterfly timber project is being developed by the Bitterroot National Forest, an adjacent landowner for whose actions FWP does not have jurisdiction, but to whom FWP may provide input and official comments. FWP evaluated the impacts of the proposed action, including secondary and cumulative impacts to the physical and human environment using the environmental review checklist format (DEA, Part II, pages 16-25). Based on this review, FWP determined that the adverse impacts to the physical and human environment are expected to be minor and temporary, that an environmental impact statement (EIS) is not required, and that an environmental assessment (EA) is the appropriate level of review.

*Comment O.2: Reduce the project size and proceed slowly. More research needs to be done before this tact is taken, monitor treatments and adapt accordingly. [10c.11, 26]*

FWP Response: FWP has monitored forest treatments across other WMAs where similar treatments have been applied over the past 11 years, since the forest management programs' inception. The techniques proposed for CCWMA are based, in part, on lessons learned from past projects occurring in similar settings. Monitoring will be applied on this project as well.

*Comment O.3: The DEA provides only two alternatives, which is problematic and probably illegal. The DEA should assess other reasonable alternatives to avoid running afoul of NEPA directives. [11b.38, 11b.45]*

FWP Response: FWP is a state agency and therefore is required to follow the directives of the MEPA (§ 75-1-201 et seq., MCA). Given FWP's forest management mandate in § 87-1-201(9)(a)(iv), MCA, FWP determined that the analysis of two alternatives was appropriate. For instance,

considering only non-commercial treatments as an alternative would be impractical and not economically feasible (as stated in the previous responses).

*Comment O.4: There are cabin remnants in the NE/E project boundary area that seems worthy as a cultural resource that your personnel have not noted. Has this site been inventoried? [12b.8]*

FWP Response: Thank you for bringing this to our attention, we were unaware of this and a file records search conducted by the State Historic Preservation Office did not find any previously recorded sites within the CCWMA. FWP will attempt to locate the cabin remnants to determine if the site may be affected by the proposed activities and whether a cultural resource inventory is needed.

*Comment O.5: Intact forests are the best and most efficient way to mitigate climate warming. The proposal should consider the effect to the carbon storage capability of the area. [15b.14]*

FWP Response: FWP considered the effects to the human and physical environment, which are expected to be minor and temporary. An analysis of how this project would alter carbon storage and the implications for climate change would not be possible; however, we expect that as result of implementing this project, the treated area will be more resilient to disturbances such as fire and therefore remain intact for a longer period of time. The articles cited in Comment 11b.19 (citations in 11b.51-52) actually categorize the Sapphire Range as low-priority for carbon sequestration due to frequent fire return intervals (11b.51), or are based on studies of deciduous forests in the eastern United States (11b.52).

## **CHANGES MADE TO THE DRAFT EA**

Based on public comments regarding the use of mechanized equipment and reopening of roads, FWP makes the following changes to the proposed CCWMA Habitat Restoration Project documented in the Draft EA:

1. Changed 716 acres from a combination of mechanized and non-mechanized treatments to non-mechanized only. Non-mechanized treatments would not utilize heavy equipment such as feller-bunchers, masticators, or skidders but may include hand cutting with chainsaws, lop and scatter, girdling, pile and burn, and/or broadcast burn.
2. Reduced 10.2 miles of road that would have been improved to facilitate log hauling down to 7.1 miles. Non-haul roads may still be brushed out to facilitate administrative use by ATVs, side-by-sides, pickups, and/or fire engines.
3. Two stream crossing culverts on Stuart Creek would not be replaced at this time.
4. Figure 2 from the Draft EA was revised to include labeled treatment units (see Appendix B in this Decision Notice).
5. Two tables were added (Appendix C): Table C1 lists further details of the treatment units (acreage, treatment types and methods), and Table C2 lists road details (including length, proposed road work, and status as a potential haul road).

## **DECISION**

Based upon the Draft EA and the applicable laws, regulations, and policies, I have determined that the proposed action will not have negative effects on the human and physical environments associated with this project. Therefore, I conclude that the EA is the appropriate level of analysis, and the preparation of an Environmental Impact Statement is unnecessary.

Eight commenters supported the proposed action, 8 commenters opposed the proposed action, and 12 commenters did not specify support or opposition. Many commenters asked questions, raised issues, and/or offered suggestions on how to change or improve the project. In this Decision Notice (DN), FWP has addressed the questions and suggestions and made changes to the project to accommodate several of the issues. No concerns were raised that FWP believes would bring the environmental analysis into question. Therefore, the draft EA, in combination with the information and project adjustments added in this DN in response to public comment, constitute the final EA.

Based on the analysis in the draft EA and the public comment received, I have selected the "Proposed Action" (Alternative B). I will recommend to the Fish & Wildlife Commission that it approves the Calf Creek WMA Forest Habitat Restoration Project, as described in the DEA and with the information and changes noted in this Decision Notice. I expect to request this approval at the Commission's next regularly scheduled meeting on June 24, 2021. (This meeting is expected to be a "virtual meeting" held via Zoom. Please see FWP's webpage <https://fwp.mt.gov/aboutfwp/commission> a few days prior to the meeting, for the agenda and details on how to watch and/or participate in the Commission's meeting.)



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Randy Arnold  
Region 2 Supervisor  
Montana Fish, Wildlife & Parks

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6/3/2021  
Date

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## APPENDIX A

All comments for the proposed habitat restoration project for Calf Creek WMA and its Draft EA, received by FWP during the initial comment period of February 5 through March 8, 2021 and the extended comment period of April 15 through April 30, 2021. (Comments received via: E = email.)

Com- men- ter #	Via	Para- graph	Comment
1	E	1	I took a quick look at the EA through Section 8.
		2	• The last sentence on pg 4 the abbreviation (WSWB) seems incorrect thin it should be WSBW (western spruce budworm)
		3	• Section 8 of the EA. I did see a described treatment of dead trees/snags however I did not see any detailed direction regarding treatment of Douglas-fir trees infected with dwarf mistletoe. In the introduction there was a brief note indicating these trees provide habitat for certain wildlife species. My comment is that it might provide the reader a better vision of the proposal if treatment of dwarf mistletoe infected Douglas-fir were briefly discussed.
		4	I'm not sure what dwarf mistletoe infected tree retention would look like. Favoring Ponderosa pine (resistant to this dwarf mistletoe) should in some measure reduce the overall infection. Dwarf-mistletoe infected trees typically enhance ladder fuels (something the proposed treatment is proposed to retard). Dwarf mistletoe infected trees would also be more susceptible to being killed in a natural wildfire. I would think your proposed treatment would aim to reduce what is likely a current overabundance of mistletoe-infected trees (compared to natural conditions). My guess is that you would not leave a great deal of dwarf mistletoe infested trees. Purposes for leaving might include existing evidence of wildlife use, recruitment of potential dead trees/snags, and enhanced variability (clumps) especially on northern aspects.
2	E	1	I am a resident of Hamilton, a hunter, and advocate for wildlife. I have reviewed the Calf Creek WMA Habitat Restoration Project proposal. I believe the proposal is well intentioned, well written, and I am 100% in favor of the project as written.
		2	Good luck with the project and I look forward to seeing the results of this endeavor.
3	E		I am in favor of the thinning.
4	E		Just a quick note to say I'm all for habitat improvement at Calf Creek WMA. Why not maximize the potential of this property for the use it was created for? I also think fire/fuel suppression is a good idea if controlled burns are not an option. Thanks for your work.
5	E	1	I support the general proposal of this draft EA. However, I make the following observations/comments:
		2	• The announcement and comment period are not conducive to adequate review because the Calf Creek Wildlife Management Area is closed to the public during this time period; therefore, precluding field review of the treatment areas.
		3	• On page 26, there is a reference "MFWP 2015" that does not have a clear corresponding citation.
		4	• Five times "the habitat type" is used but is not defined nor a citation used.
		5	▪If "habitat type" is referring to those known via <i>Forest habitat Types of Montana</i> <sup>1</sup> ,
		6	--"the habitat type" should be named and cited properly.
		7	--it would be very useful if "habitat type" as defined by Pfister, et. al. 1977 was used in this and future EA's. Habitat typing is a very useful tool to describe forest stands and evaluate their management options.
		8	▪"The habitat type" implies there is only one found in the treatment areas. I find this unbelievable as the elevation range—which is not given in the EA—from 4200 to nearly 6000 feet.
		9	▪Whatever "the habitat type" is referring to needs to be cited so that a reviewer can consider whether or not the "habitat type" was correctly determined and, therefore, judge the merit of the proposed treatments.
		10	• Prescriptions proposed are given by units, "grassland/shrubland restoration" and "forest restoration." However, they are not mapped; therefore, a reviewer can only make assumptions where which prescription will be applied.

11			<ul style="list-style-type: none"> <li>Promotion of aspen growth and regeneration is stated as a proposed action. However, aspen is not mentioned in the Ecological Setting nor Area Description. It is difficult to assess the need or the effectiveness of the proposed treatments. The Alternative B Proposed Action does not mention aspen and its potential response to treatment. I believe aspen management in Montana is in its infancy and not well understood. I strongly suggest using the “Aspen Functional Types of North America” and use the methodology “Developing an Action Plan” recommended by the Western Aspen Alliance.<sup>2</sup></li> </ul>
12			<sup>1</sup> Pfister, Robert D.; Kovalchik, Bernard L.; Arno, Stephen F.; Presby, Richard C. 1977. Forest habitat types of Montana. Gen. Tech. Rep. INT-GTR-34. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest & Range Experiment Station. 174p.
13			<sup>2</sup> Rogers, Paul C. 2017. Guide to Quaking Aspen Ecology and Management with Emphasis on Bureau of Land Management Lands in the Western United States. BLM-UT-G1017-001-8000. 98 p. Logan, Utah, Western Aspen Alliance.
6	E	1	I am writing about the project up at Calf Creek, an area where I have spent many hours exploring and enjoying for several years. I am concerned about this project as there is scant information about the specifics of it. How will it be accessed, will it involve partial or complete closure of Calf Creek, just what areas seem to need to thinned or cleared, does it include the lower areas where the trees or spaced very far apart, does it include the old orchard up in the higher part of the refuge, does it include putting roads and skid roads into the area? The discussion so far presented is too sketchy for those of us who are invested in that area to form any type of opinion.
		2	I look forward to your response, thank you
7a	E		Do you know what road will be used to access calf creek to do this work?
7b	E		What periods of time will calf creek be closed to hikers? By month, please. What is the overall schedule — years
8	E	1	When we look to manage ecosystems, it is of course essential that we look at how the ecosystem functions pre-settlement. My perspective is that nature is perfect. I hope that this is also your perspective.
		2	Regarding the Calf Creek management area, I think you are on the right track to re-establish a grass and sagebrush ecosystem.
		3	My concerns center on the removal of organic material. In nature, when a fire moves through, the trees are killed but they are not removed. Their finer fuels like branches and needles are burned and the ashes nourish the soil with released nutrients. Sometimes the trunks burn too. Most trunks do not burn and remain on the site where they can nourish the soils with their slow release of nutrients. The logs also have many other benefits. Those that remain standing are of course essential for birds and insects too numerous to list. When the logs are on the ground, they provide habitat for rodents, insects, birds, carnivores, amphibians, and many other creatures. These rotting logs also have the ability to hold water, lots of water that helps all plants in the vicinity including grass and sagebrush.
		4	For the above-mentioned reasons, I support enlarging the grasslands at Calf Creek with the idea that all material remains on the site. Branches and small trees could be piled – some to be burned and the nutrients will release quickly, some piles to become habitat piles where rodents and others can flourish, and their nutrients released slowly. Larger logs can be limbed and left to rot to insulate the soil and contribute organic material which will keep the grass greener longer. These logs are also a direct benefit to elk calves who may lay against them on the south side to absorb the sun. Chipping some material and spreading the chips may also have a place in this project. By not removing any logs, just laying them down, ground disturbance would be kept to a minimum with the result of less weeds and more native variety because of less subsequent use of herbicides.
		5	This is an opportunity to enhance and enrich these soils as harvesting will in the long run always reduce soil fertility (unless amendments are added at some point).
		6	In nature, all material remains on the site. Let us do our best to mimic nature.
9	E		I believe that Calf Creek is important for elk calves as the name suggests. Grazing is important and with fire suppression, we have lot wildlife grazing land. I feel that it is important to leave the organic material on the land so please consider making that a big part of the project. Also, with so many projects on the forest, we are left with weeds after the soil is disturbed by the machinery. I am very concerned about that. Please make an effort to consider a good plan to prevent the spread of weeds. If we clear trees to make grazing land for wildlife and instead weeds grow there due to disturbance, we have accomplished nothing. Thank you.

10a	E	1	Thank you for the opportunity to comment on the Calf Creek WMA Habitat Restoration Project. However, because Calf Creek WMA is closed from Dec 1 to April 15, the public cannot access the areas delineated in the EA. If we cannot visit the area, how can we submit meaningful comments? I ask that you extend the comment period until May 15 to give the public 30 days to review the EA in the field.
		2	I also add a few following comments:
		3	1. Your baseline air photos from 1954 hardly represent "historic conditions". Settlement by Europeans occurred about 75 years earlier. The 1954 conditions could have resulted from many different factors, including logging by the Anaconda Company and/or stand-replacement wildfire (which you claim did not exist.....but how do you know?). Your baseline for historic conditions should go back to at least 1910 before the fire suppression started that you claim is responsible for departure from historic conditions (a contentious claim in the scientific community).
		4	2. You provide no evidence that the proposed "treatments" are effective in increasing wildlife forage. Please provide scientific studies, or even your own post project monitoring, that demonstrate this. You state that you will return the landscape to a "ponderosa savanna", but the Hayes Creek project (BNF, 2005-2010) resulted in a landscape that could be more accurately described as a knapweed savanna. It is an evenly spaced ponderosa pine plantation with an understory of knapweed, St Johns wort, and cheatgrass, in that order. None of these are great wildlife forage to my knowledge.
		5	Please extend the comment period to allow the public, who own these lands, to visit the units and submit meaningful comments.
10b	E	1	Thank you for the excellent and informative field trip to Calf Creek WMA. A few of us spent another day at there with the map of treatment units, and I will submit more comments, but I have a couple questions/comments before I do:
		2	1. You could probably tell that my biggest issue is running heavy equipment over the area and the profusion of weeds, especially knapweed, that is likely to result. I'm especially concerned that a feller-buncher will be used for much of the work, crushing the sagebrush and disturbing the soil. Soil disturbance by the feller-buncher in Bitterroot NF on the west side of the valley has resulted in what I call the knapweed savanna. And sagebrush is a slow-growing plant (Baker, 2006; attached <i>[copy available from R2 FWP upon request]</i> ). I counted annual rings on some dead stems, and the plants ranged from 32-60 years old, so recovery of damaged/killed sagebrush will be slow. Therefore, I think it is important to use non-mechanical methods as much as possible, even if it means doing less intensive treatments. For example, I visited unit GR-1 which is a large area with no roads—how do you propose to accomplish the conifer removal? I not want heavy equipment to drive all over this area, which still contains large areas of both healthy bunchgrass and sagebrush.
		3	2. While the trees might be shading-out some sagebrush, I noticed that they are also shading-out knapweed. I suspect that as soon as you open the canopy, if ground is disturbed, knapweed will proliferate as it has over here on the west side knapweed savanna. I know that eradicating knapweed is a tough proposition, but you can at least prevent its spread fairly easily by limiting soil disturbance.
		4	3. Regarding mountain big sagebrush, Baker (2006) found it is intolerant of any fire, slow growing with recovery times of 35-100 years, and has mean fire rotations of 70-200 years (mountain big sagebrush) or 35-100 years (mountain grasslands with a little sagebrush). Therefore, either fire intervals for Calf Creek WMA are significantly underestimated (which is what I suspect), or sagebrush was not part of pre-1910 conditions. Baker (2006) went on to say " <i>Given these long rotations, fire exclusion likely has had little effect in most sagebrush areas.</i> " I know you want to preserve the sagebrush component, and that is OK with me. This is just some food for thought, because longer fire-free intervals may and should have implications for your forest treatments as well.
		5	4. I'm glad you are following ICO guidelines. I hope this project does not get reduced to a simple fuel reduction project in order to get funding.
		6	5. I noticed that the boundaries of the GR units spill over a bit onto the more northerly and more leeward aspects. I would think that conifers, both PP and DF, would be present just below the break in slope, and so ecologically it makes sense to keep them, at least the larger ones. I hope those boundaries are not to provide more commercial timber for the contractor.
		7	Again, thanks for the field trip, for listening to our questions and thoughts, and for the papers and pictures, which I have yet to look at.

10c	E	1	Thanks for extending the comment period on the Calf Creek Habitat Improvement project, and thanks to Rebecca and Jason for the excellent field trip. However, I have serious concerns with this project, especially with your solution of using commercial logging and heavy equipment to improve forage.
		2	You provide no scientific support that your heavy-handed treatments will improve forage, while there is ample evidence that they will spread invasive weeds and therefore degrade forage. For details and references, see the Friends of the Bitterroot comments, which I hereby incorporate into my own.
		3	Re-opening over 10 miles of roads will degrade streams and the experience for the many local residents who value the CCWMA for quiet recreation. Although recreation is not an acknowledged purpose of the CCWMA, it nonetheless is an important use. When you "found" a loophole in the rules that allowed us access to the entire area before May 15 <sup>th</sup> so that you would not have to extend the comment period, it shed doubt on the claim that the elk come first. It seems that, this time, ramming the project through quickly is the first priority.
		4	This project's environmental effects should be analyzed together with the adjacent huge BNF Gold-Butterfly timber project. I have heard that the CCWMA project was suggested by the BNF Supervisor, and that concerns me. Do not allow log hauling through CCWMA from BNF.
		5	To improve habitat, I suggest the following less costly and less harmful measures:
		6	1. Keep the CCWMA closed to the public until May 15 <sup>th</sup> .
		7	2. Drop the commercial logging portion of the project.
		8	3. Do any conifer removal by hand, non-commercially.
		9	4. Do not use masticators, feller-bunchers, or any other heavy equipment. They will disturb the soil, kill the sagebrush and native grasses, and spread invasive weeds.
		10	5. Make knapweed reduction a priority. Use bio controls and hand digging/pulling. Using herbicides will just replace the knapweed with cheatgrass.
		11	6. Reduce the project size and proceed slowly. Monitor treatment successes and failures, and adapt accordingly. Avoid having your solutions become the next problems.
		12	7. Use prescribed fire only in the summer or fall, when wildfire would have historically occurred. Do no spring burns.
		13	8. Do reclamation work on the eroded roads in the western part of the CCWMA, but leave the naturally reclaimed roads as the tranquil trails they have become—do not reopen them. Reopening some of them (for example, the road along Gibbons Creek) may violate Montana SMZ laws.
11a	E	0	Please accept the attached Microsoft Word document as my comments for the proposed CCWMA project.
		00	Additionally, I would like to be kept informed about this project as it moves forward including access to other comments, changes/additions, and the final EA. Please add my email address to the list of those who receive notifications.
		1	The Proposal for this project states:
		2	Montana Fish, Wildlife & Parks (FWP) proposes to conduct habitat restoration treatments on 1,116 acres of forest and grass/shrublands on its Calf Creek Wildlife Management Area (CCWMA), in Ravalli County (Figures 1 and 2). The objectives of the proposed treatments are: 1) improve elk and deer winter forage, 2) restore grass/shrublands through conifer removal, 3) promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type, and 4) promote aspen growth and regeneration. The treatments would involve the removal of conifer trees (both merchantable and sub-merchantable) through a combination of mechanical and non-mechanical treatments. (Section 8 Narrative Summary, below, includes a detailed description of the proposed action.) If approved by the Montana Fish and Wildlife Commission, the work would begin as early as December 2021. Mechanized treatments would not occur during the general rifle hunting season and would include efforts to minimize impacts during the archery hunting season (e.g., no logging on weekends). The purpose of this project is to improve wildlife habitat; this project would not be proposed if not for a need to conserve and improve wildlife habitat on the WMA.

11b	E	3	The first objective, “improve elk and deer winter forage” cannot be met by this project as it (the project) is proposed to take place beginning in December 2021, the very time elk and deer are presumed to be foraging in the project area. Project activity during the same time that “winter forage” is assumed to be consumed would drive elk and deer from the area.
		4	The second objective, “[to] restore grass/shrublands through conifer removal” is questionable. The project description contains no reference to records which indicate the project area ever contained more grassland than it now contains. Although could assume that there were more grasslands immediately after the area was last logged, there is no mention of proof that grasslands were once dominant in the area.
		5	Those most familiar with this area understand that the driest portions of the area are mostly inhabited by two species well-adapted to dry conditions, Ponderosa pine and sagebrush. It is magical thinking to believe that grasses will establish themselves, with or without human help, in the driest areas. Yes, removing some trees and sagebrush may allow more bunch grass to grow, but more than likely the soil disturbance that will take place during removal will introduce more knapweed, one of the world’s best plants adapted to dryness.
		6	The third objective, “promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type” runs contrary to recent research. In fact, the locations in the CKWMA which contain the highest density of trees are also the most moist and unlikely to develop high-intensity fire because of the elevated moisture levels in the understory plants.
		7	Other timbered (both merchantable and sub-merchantable) locations are populated with widely spaced trees and are unlikely to develop high-intensity, torching wildfires.
		8	The fourth objective, “promote aspen growth and regeneration,” is a disingenuous claim. It is well known that elk and deer use aspen as a food source. The continued presence of these two ungulates will keep aspen from spreading unless they (the ungulates) are continually on watch for predators. Predators other than coyotes have been almost entirely eradicated from the area on and near this project by trappers and hunters so it is highly unlikely that any increase in aspen will take place.
		9	Given the descriptions included in the DEA, claiming that the “purpose of this project is to improve wildlife habitat” seems disingenuous. Currently, the majority of the grassy areas in the CCWMA are overrun with knapweed. If, in reality, the project was actually intended to improve wildlife habitat, it would make more sense to concentrate entirely on eradication knapweed. As proposed, the project appears to be a logging project masquerading as a restoration.
		10	On page 25, (13.a) it states:
		11	“This project would improve ungulate habitat conditions, restore historic forest characteristics, and reduce susceptibility of the subject stands to high-severity wildfire on and adjacent to the Calf Creek WMA. Work proposed in this EA may compliment similar forestry work on adjacent lands, but FWP does not anticipate any cumulative negative impacts to result if this project were completed.
		12	However, no peer-reviewed research or scientific evidence is cited that substantiates claims that:
		13	1. This project would improve ungulate habitat conditions;
		14	2. restore historic forest characteristics; and
		15	3. reduce susceptibility of the subject stands to high-severity wildfire on and adjacent to the Calf Creek WMA.
		16	In addition, there is no mention of the cumulative impacts this project might have on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency undertakes such other actions. Because this project is adjacent to the Forest Service Gold Butterfly project and other known past and planned project, the omission of cumulative impacts seems particularly egregious.
		1	After-Field-Trip (April 16, 2021) Comments on the Draft Environmental Assessment for the Calf Creek Wildlife Management Area Habitat Restoration Project (February 2021)
		2	22-Apr-21
		3	The Draft Environmental Assessment (DEA) for this project states:

4	<p>“Montana Fish, Wildlife &amp; Parks (FWP) proposes to conduct habitat restoration treatments on 1,116 [of 2,416] acres of forest and grass/shrublands on its Calf Creek Wildlife Management Area (CCWMA), in Ravalli County ... . The objectives of the proposed treatments are: 1) improve elk and deer winter forage, 2) restore grass/shrublands through conifer removal, 3) promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type, and 4) promote aspen growth and regeneration. The treatments would involve the removal of conifer trees (both merchantable and sub-merchantable) through a combination of mechanical and non-mechanical treatments. ... If approved by the Montana Fish and Wildlife Commission, the work would begin as early as December 2021. Mechanized treatments would not occur during the general rifle hunting season and would include efforts to minimize impacts during the archery hunting season (e.g., no logging on weekends). <u>The purpose of this project is to improve wildlife habitat</u> (emphasis added); this project would not be proposed if not for a need to conserve and improve wildlife habitat on the WMA.”</p>
5	The DEA goes on to proclaim:
6	<p>“<u>A migratory elk herd uses the CCWMA for winter range</u> (emphasis added) and is frequently observed on the open slopes throughout the fall, winter, and spring. Mule deer, white-tailed deer, black bear, mountain lion, wolf, moose, mountain grouse, and furbearing species call the WMA home throughout the year. A wide variety of nongame wildlife species use the CCWMA, including many bird, small mammal, and reptile species that are considered Montana Species of Concern (SOC). The WMA is a popular destination for recreation, especially hunting in the fall, and mountain biking and horseback riding in the summer; in fact, this WMA has a special “early open” period, allowing users to access part of the WMA beginning April 15. ...”</p>
7	In the section under “Ecological Setting,” the DEA asserts that:
8	<p>“<u>Primarily in response to fire exclusion, conifers have expanded into grass/shrubland habitats</u> (emphasis added) and converted bunchgrass-sagebrush dominated systems to variably dense forest stands with forest associated understory species such as snowberry and pinegrass... . Forest succession towards mid-seral, closed-canopy stage reduces plant diversity and abundance, thereby reducing forage available to wildlife species. If left unchecked, conifer expansion could impact big game populations along with other wildlife species such as songbirds and small mammals.</p>
9	<p>“<u>Forest conditions have also departed from their historic range of variability due to past timber management, fire exclusion, and forest succession.</u> (emphasis added) Extensive timber harvest in the late 19th through early 20th centuries removed much of the mature timber in the area. Remnant trees and trees that regenerated from this early harvest form the overstory trees present today. Historically, fire frequency ranged between 5 and 50 years, and fire severity was typically low to <u>moderate.</u> (emphasis added) This predominant fire disturbance cycle maintained open stands dominated by mature ponderosa pine. The combination of historic timber harvest and fire exclusion has resulted in a shift of species composition and structure. Today there is a relatively high-density of overstory trees, and Douglas-fir makes up a greater proportion of the species composition than it would have historically. Overall, there is a higher stocking of conifer trees across the CCWMA, which has led to decreased coverage of grasses, shrubs, and forbs. Dense sapling-sized trees create a “fuel-ladder,” which has the potential to kill overstory trees in the event of a wildfire. If left unchecked, forest succession could negatively impact winter range habitat for big game and habitat for a variety of wildlife species that depend on more open conditions. As fuels continue to build up, the susceptibility of the area to stand-replacement fire would increase, which is atypical for the habitat type.</p>
10	April 16, 2021 Field Trip
11	Let me begin by stating that I appreciated the field trip (for interested parties) which was put together by Rebecca Mowry and Jason Parke. It was informative and helped provide a more thorough understanding of this project’s intent. Especially important to me was the fact that both Rebecca and Jason seemed open to the validity of science-based arguments offered by members of the public who participated in the field trip.
12	Necessity of Proposed Actions
13	<u>Forest Composition and Structure</u>
14	I want to address the assertion (Ecological Setting, first paragraph) that, “Primarily in response to fire exclusion, conifers have expanded into grass/shrubland habitats...” I do not believe there is data to backup that claim.



15	According to a current Forest Service (FS) map of Fire Starts, only six wildfires have impacted the CCCWMA with only two of those beginning on the Management Area (MA). The others began on either FS or private land. Other than the most heavily forested region of CCWMA, the MA is rated (by the FS) with having the lowest starts per square mile.
16	Of the wildfires allowed to burn near the MA, all four were to the east on lands managed by the FS. The prevailing winds moved those fires away from the CCWMA. This information was gathered from a FS Fire History map from 2019 showing wildfires back to 1870, a period of almost 150 years. The information contained on those two maps indicates that purposeful <u>fire exclusion was not a factor in conifer expansion on the CCWMA</u> . This FS and other data contradicts the prevailing belief that a century of fire suppression is directly responsible for the current status of our forests and refutes the claim that “Historically, fire frequency ranged between 5 and 50 years, and fire severity was typically low to moderate” (Ecological Setting, second paragraph) for the CCWMA.
17	There is an additional claim (Ecological Setting, second paragraph) that, “Forest conditions have also departed from their historic range of variability due to past timber management, fire exclusion, and forest succession. Extensive timber harvest in the late 19th through early 20th centuries removed much of the mature timber in the area.”
18	Since available data show that fire exclusion was not practiced to any great extent for the past 150 years in the CCWMA, the only DEA-listed reasons left are timber management and forest succession. The existence of old stumps is evidence that at some point many if not most of the trees capable of producing lumber were removed from the MA. It is therefore realistic to assume past logging had an impact at producing current forest conditions. It is also reasonable to assume that logging/thinning a forest now would have an impact on future conditions of that same forest. What is not logical is to presume that logging/thinning will reduce the possibility of catastrophic wildfire. <sup>1</sup>
19	Interesting to me is that this DEA makes the assumption that the logging/thinning proposed as part of this project will produce a more desirable forest. That belief is outdated and not based upon the latest research. <sup>2 3 4</sup>
20	There is no provision in the DEA for the possibility that not performing management activities (logging/thinning) in the current forest and allowing natural forest succession to occur is likely to produce a more natural forest. <sup>5</sup> Whether by oversight or design, this DEA is sacrificing natural forest succession in order to produce income (from logging/thinning) which will offset a portion (however small) of the overall cost of this project. I do not believe that sacrifice should be made.
21	A forest and its multiple ecosystems can never reach a natural equilibrium if not left alone. Any and all management activities will disrupt naturally occurring processes and certainly cause unintended consequences. Far too many ecosystem components and their interconnectivity exist in a forest for anyone to gain a complete understanding. It is best to observe and study with the only intent being to gain knowledge. Interference with nature by humans has yet to produce positive results. Assuming that “this time will be different” is presumptuous and short sighted.
22	<u>Grass and Shrublands</u>
23	The primary management goal, as stated in the Calf Creek WMA Management Plan, is to provide habitat for a diversity of wildlife species and populations, with an emphasis on elk winter range. This DEA proposes to meet that goal by removing conifers encroaching on historically bunchgrass-dominated montane grasslands, increasing recruitment of forage and browse species, and promoting aspen growth and recruitment.
24	The DEA compares aerial imagery from 1954 and 2017 to “prove” that the MA has lost grassland to conifer encroachment. That comparison is not entirely convincing. The DEA includes no data that indicate why, in 1954, the MA contained more grassland than forest. Was it because the area had recently been used to graze cattle or to produce hay? Was 1954 the end of an especially wet or dry period? Had the grassy areas been recently logged? More information should be provided that indicates (or at least theorizes) why the MA contained more grassland.
25	During the April 16th field trip, it was repeatedly mentioned that the young trees (under 80 years of age) growing in the predominately grassy areas needed to be removed. The assertion was that, not only would this allow the land under the removed trees to grow grass and sagebrush, but it would stop further encroachment of trees into the grasslands. There are two problems with this approach.

26	The first has to do with the spread of the current, widespread infestation of two invasive plant species in the MA: cheatgrass and spotted knapweed. Both are present at high levels, especially spotted knapweed. Soil disturbance, from management activities implemented with restoration goals in mind, is often the main factor contributing to the spread of both species. The more a “treatment” disturbs the soil, the greater the likelihood cheatgrass and spotted knapweed will spread to new areas. <sup>6</sup> Driving equipment over already weed-infested ground to remove young conifers will not only damage the existing slow-growing sagebrush but will certainly increase the spread of the existing weed species. That weed-spread will limit the establishment (let alone any increase) of the “preferred” grasses, something which is apparently the goal of removing the young conifers.
27	While walking the grassy areas of the MA during the field trip, I searched for the presence of young tree seedlings (ponderosa pine). I was able to spot only 3 that appeared younger than 10 years old. Such a deficiency would seem to indicate one of two things. Either the trees that are currently growing in the grassy areas are not producing seeds, which seems unlikely given the numerous cones on the ground or, climatic conditions are not conducive to the survival of tree seedlings. Based on recent research conducted at UM, it is likely that climatic conditions are the reason ponderosa pine seedlings are not surviving. <sup>7</sup> Therefore, I suggest that the DEA’s assumption that there will be an increasing spread of ponderosa pine into the remaining grassy areas is incorrect.
28	It is a “given” that the mechanical treatment proposed to remove the existing “young” trees from the MA’s grassy areas will certainly increase the spread of invasive plants to the detriment of desired grasses. And, based upon the most recent peer-reviewed climate science, current hot and dry climatic conditions (which are already adversely affecting the viability of tree seedlings) will continue to intensify (hotter and dryer) into the foreseeable future.
29	Based on that information, I assert that this project should not remove the young trees growing in the grassy area. Doing so would be a waste of scarce resources and unlikely to accomplish the intended goal of the DEA. Rather than blaming tree encroachment for the supposed lack of good forage (grass) the project should acknowledge that spotted knapweed and cheatgrass are the real culprits and concentrate on the control/eradication of those two species of invasive plants.
30	Project Alternatives
31	Only two are offered by the DEA:
32	Alternative A: No Action
33	If FWP decides not to proceed with the proposed action, grass/shrubland and forest restoration, treatments on the Calf Creek WMA would not occur at this time. Elk and deer winter range would continue to experience conifer expansion and in-growth. Forest succession on the WMA would trend towards increasing canopy coverage, stressing water resources and shading out important forage grasses and deciduous vegetation. Aspen stands in the project area would continue to be stressed and out-competed by conifers, with subsequent impacts to nongame wildlife use of the WMA.
34	Alternative B: Proposed Action
35	FWP would conduct grass/shrubland and forest habitat improvement treatments on approximately 1,116 acres of the Calf Creek WMA as described in the Narrative Summary (Section 8, above). Following this action, FWP anticipates that important ungulate winter range condition would improve due to increased grass and woody browse recruitment. Habitat diversity would be expected to increase at the stand-level and across the larger landscape, providing habitat niches for a wide range of game and nongame wildlife.
36	If forced to select one or the other, I would pick the “No Action” alternative. However, my preference would be an unoffered alternative which concentrates on the control/eradication of the two most prevalent invasive plants, spotted knapweed and cheatgrass using biocontrol and non-mechanical methods (hand removal).
37	Given the predominance of recent, contradictory research, I do not believe any forest treatment is necessary to prevent catastrophic wildfire or increase forest health by removing understory plants, opening the canopy, or removing certain tree species to benefit other trees. All suggested treatments are designed to produce a forest that represents unproven, historical conditions, <u>a silviculturist-imagined, perfect-world forest</u> which yields an endless supply of readily marketable timber to industry.
38	There is also a matter of legality. The fact that the DEA provides only two alternatives, “do nothing” or “do what is proposed,” is problematic and probably illegal. In 1997 the 7th Circuit Court held that “a federal agency’ failed to examine the full range of reasonable alternatives...” (Simmons v. US Army Corps of Engineers – 1997). As I previously suggested, there are other obvious alternatives and the DEA should address those to keep from running afoul of NEPA directives.

39	Conclusion
40	To reiterate, the primary management goal, as stated in the Calf Creek WMA Management Plan, is to provide habitat for a diversity of wildlife species and populations, with an emphasis on elk winter range. Focusing on providing wildlife habitat, especially for elk, can best be accomplished by focusing on simple, low-cost activities that improve the existing grassland on the MA (i.e. control/eradication of the two most prevalent invasive plants, spotted knapweed and cheatgrass).
41	The DEA documentation dealing with the cumulative impact of this, previous, and foreseeable future projects (not just those which happen on this WMA, but in the surrounding area) is inadequate to the point of being nonexistent (page 25, 13a). This is an increasingly important requirement of NEPA and should be corrected before moving forward.
42	It is problematic that this CCWMA project abuts the proposed Forest Service Gold Butterfly project. Apparently there have been (telephone) communications with the Forest Service about collaboration between this CCWMA project and the proposed FS Gold Butterfly Project. Although nothing has come of those discussions (so far), the fact remains that both projects are scheduled to run concurrently and have road systems that were once connected.
43	The potential for situations that could be detrimental to the CCWMA is possible and required study, discussion, and sufficient public notice. Currently, the Gold Butterfly project has a single point of access: Willow Creek Road. The likelihood that the FS will “pressure” the State to collaborate (possibly by offering GNA or other financial support) to allowing access across CCWMA in order to shorten the haul route for logs is sufficiently high enough to be worrying.
44	I suggest that the DEA be rewritten to:
45	• Include more alternatives, thereby conforming more closely to NEPA regulations;
46	• Incorporate a thorough investigation and reporting of the cumulative impacts of this, previous, and foreseeable future projects: a NEPA requirement;
47	• Focus on the control/eradication of spotted knapweed and cheatgrass; and
48	• Reveal all communications between the BNF and Montana FWP.
49	<sup>1</sup> Bradley, C.M., et al. (2016) Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States? <a href="https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.1492">https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.1492</a>
50	<sup>2</sup> Harris, N.L. (2016) Attribution of net carbon change by disturbance type across forest lands in conterminous US - <a href="https://cbmjournal.biomedcentral.com/track/pdf/10.1186/s13021-016-0066-5.pdf">https://cbmjournal.biomedcentral.com/track/pdf/10.1186/s13021-016-0066-5.pdf</a>
51	<sup>3</sup> Buotte, P.C. et al. (2019) Carbon sequestration and biodiversity co-benefits of preserving forests in the western United States - <a href="https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/eap.2039">https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/eap.2039</a>
52	<sup>4</sup> McNulty, S.G. et al. (2014) The rise of the mediocre forest - why chronically stressed trees may better survive extreme episodic climate variability - <a href="https://www.srs.fs.usda.gov/pubs/ja/2014/ja_2014_mcnulty_001.pdf">https://www.srs.fs.usda.gov/pubs/ja/2014/ja_2014_mcnulty_001.pdf</a>
53	<sup>5</sup> Pearce, F. (2020) Natural Debate - Do Forests Grow Better With Our Help or Without - <a href="https://e360.yale.edu/features/natural-debate-do-forests-grow-better-with-our-help-or-without">https://e360.yale.edu/features/natural-debate-do-forests-grow-better-with-our-help-or-without</a>
54	<sup>6</sup> Dodson, E.K. and Fielder, C.E. (2006) Impacts of restoration treatments on alien plant invasion in ponderosa pine - <a href="https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2664.2006.01206.x">https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2664.2006.01206.x</a>
55	<sup>7</sup> Davis, K.T. et al. (2019) Wildfire and climate change push low-elevation forest across critical climate threshold for tree regeneration - <a href="https://www.pnas.org/content/116/13/6193">https://www.pnas.org/content/116/13/6193</a>
1	Additional Comments Regarding the Proposed Calf Creek Wildlife Management Area Project
2	April 30, 2021
3	Re: Please attach the following to my two previous comment documents.
4	I direct your attention to the following sections of narrative from the Draft EA (DEA).
5	The second objective, “[to] restore grass/shrublands through conifer removal.” (DEA, page 1).
6	“This project would improve ungulate habitat conditions, restore historic forest characteristics, and reduce susceptibility of the subject stands to high-severity wildfire on and adjacent to the Calf Creek WMA. Work proposed in this EA may complement similar forestry work on adjacent lands, but FWP does not anticipate any cumulative negative impacts to result if this project were completed.” (DEA, page 25)

7	<u>“Primarily in response to fire exclusion, conifers have expanded into grass/shrubland habitats</u> (emphasis added) and converted bunchgrass-sagebrush dominated systems to variably dense forest stands with forest associated understory species such as snowberry and pinegrass... . Forest succession towards mid-seral, closed-canopy stage reduces plant diversity and abundance, thereby reducing forage available to wildlife species. If left unchecked, conifer expansion could impact big game populations along with other wildlife species such as songbirds and small mammals. (DEA, page 4)
8	I addressed the above narratives in previous two comment documents dated March 8, 2021 and April 22, 2021. However, further observations during an extensive hike over the WMA on April 28th suggest the need for more remarks.
9	My April 22nd remarks included the following:
10	“While walking the grassy areas of the MA during the field trip, I searched for the presence of young tree seedlings (ponderosa pine). I was able to spot only 3 that appeared younger than 10 years old. Such a deficiency would seem to indicate one of two things. Either the trees that are currently growing in the grassy areas are not producing seeds, which seems unlikely given the numerous cones on the ground or, climatic conditions are not conducive to the survival of tree seedlings. Based on recent research conducted at UM, it is likely that climatic conditions are the reason ponderosa pine seedlings are not surviving. <sup>1</sup> Therefore, I suggest that the DEA’s assumption that there will be an increasing spread of ponderosa pine into the remaining grassy areas is incorrect.”
11	Although I stand by my previous conclusions, during the April 28th hike, I did find evidence of young 3- to 4-year-old ponderosa pine seedlings. Those seedlings were not in the grassy areas but were in wet, more heavily forested areas. That discovery supports the research of Davis, K.T. et al. and further refutes the need for this project’s second objective, “[to] restore grass/shrublands through conifer removal.” <sup>2</sup>
12	This DEA’s pitch that grasslands must be expanded to improve ungulate habitat conditions, is brought into question by another observation made during the April 28th hike. There is no on-the-ground evidence elk and deer are suffering from a lack of food on the CCWMA. If they were, the grasses and shrubs would show signs of being over grazed.
13	Intense scrutiny is required to find even minimal evidence of ungulate grazing. Ungulate scat, although widespread, is infrequent over the entire Wildlife Management Area (WMA), further evidence of a population that is well within the carrying capacity of CCWMA. This lack of scat is in contrast to other grassy areas in the Sapphire Mountains (for example, the landscape directly west of the current Darby Lumber Lands Phase Two Project) where the elk population is much higher but still within the carrying capacity of the countryside.
14	On-the-ground observation strongly suggests that this DEA’s implied assumption that the bunchgrass-sagebrush landscape does not have a carrying capacity adequate for the current ungulate population is incorrect. Furthermore, the current and expected future dry conditions of the grassy areas on the WMA imply that encroachments by ponderosa pine into the grasslands is unlikely into the foreseeable future. <sup>3</sup>
15	Given the propensity for management actions of a mechanical nature to spread weeds, the DEA’s suggested actions to remove ponderosa pine from the grassy areas is counterproductive. It makes much more sense to focus this project on weed control/eradication. It is obviously the spotted knapweed and cheatgrass that are inhibiting grass proliferations. Limiting the presence of those two invasive species would do far more to encourage the growth of grasses than the removal of the limited number of ponderosa pine supposedly “encroaching” into the bunchgrass-sagebrush landscape.
16	As suggested in an April 2021 article, “A better handle on all processes that affect microbial biodiversity and their net balance is needed. Lack of insight into the dynamics of evolution of microbial biodiversity is arguably the single most profound and consequential unknown with regard to human knowledge of the biosphere.” <sup>4</sup> Although focused on microbial biodiversity, the article points out that humans lack insight into the impact of their actions on the planet’s ecosystems. That is applicable to the management actions contained in this DEA.
17	To recap, I strongly suggest that this DEA be rewritten to focus management activities on the control/eradication of spotted knapweed and cheatgrass. All other management activities included in the current DEA are questionable and, based upon the most current research, are likely to be counterproductive.
18	<sup>1</sup> Davis. K.T. et al. (2019) Wildfire and climate change push low-elevation forest across critical climate threshold for tree regeneration - <a href="https://www.pnas.org/content/116/13/6193">https://www.pnas.org/content/116/13/6193</a>
19	<sup>2</sup> Davis. K.T. et al. (2019) <i>ibid.</i>
20	<sup>3</sup> Davis. K.T. et al. (2019) <i>ibid.</i>

		21	<sup>4</sup> Thaler, D.S. (2021) Is global microbial biodiversity increasing, decreasing, or staying the same - <a href="https://www.frontiersin.org/articles/10.3389/fevo.2021.565649/full">https://www.frontiersin.org/articles/10.3389/fevo.2021.565649/full</a>
12a	E	1	Please accept my comments on the above proposed project.
		2	Most importantly, the project area is and has been closed, long before comments were open to the public. How can the public make informed comments if we can't visit the area and see what you have planned on the ground? Please extend the comment period to one month after the area is fully open.
		3	There are few large trees left on Calf Creek. Please limit any commercial cutting to trees under 12" dbh. Emphasize non commercial hand thinning, piling, and burning, with prescribed burns afterwards, preferably in the fall when shrubs are dormant.
		4	There is mistletoe in the vast majority of Doug firs in the WMA. Dwarf mistletoe is endemic, omnipresent on our forests locally, and provides valuable cover and food for many species. It should not be an excuse to cut near all the large and living firs that remain in Calf. You will never eliminate it, nor will you isolate it to a small majority of firs going forward. Please save all Doug firs 12" or greater.
		5	Calf creek is a rare low elevation recreation area in our valley that is heavily used. The "thick" woods are valued by forest visitors for their coolness and solitude. "Opening" the forest up and turning it into a dry, weedy plantation will destroy its character. Work on the many natural glades, thinning out the small encroaching trees. The many rough, old logging roads are intimate and enjoyable trails now. "Improving" them will change the character and recreational value for decades. Please avoid this.
		6	I hope you're reaching out to, and hearing from the many horsemen who visit Calf. While I hike and bike at Calf, I believe my above suggestions would be supported by not just hikers and bikers, but by other users too—including horse folks.
12b	E	0	<i>[He stated these comments are from him and wife (Commenter #13)]</i>
		1	—I support opening up some of the natural meadows/parks by cutting/girdling/removing encroaching conifers while retaining junipers. However, I don't support driving heavy machinery this way and that to pluck these small trees, while crushing sagebrush, compacting the soils, and damaging valuable native forage.
		2	—Remove the non-native Siberian pea shrubs. There's an extensive amount. Consider planting natives in their place.
		3	—Analyze the presence and prevalence of knapweed biocontrol insects in the WMA. Do not assume they exist in all knapweed colonies or that they're in sufficient numbers throughout the treatment units to the levels required for significant positive impact. Knapweed biocontrol is fairly effective and has the public's broad support (unlike herbicides which may also just allow cheat grass to supplant the knapweed). Reducing knapweed while increasing natives via biocontrols should be a centerpiece of your Calf Creek proposal. It makes no sense and does the WMA a disservice to ignore it. Significantly changing the makeup may benefit wildlife more than the expanded openings and certainly more than the commercial logging planned. The knapweed is overtaking the meadows faster than the encroaching conifers.
		4	—While recreation use and its quality isn't a "mandate" for Calf Creek WMA it is nevertheless very popular and the public deserves at least to be informed that recreation is not being considered and the project's impacts will likely change the character and diminish the recreation quality. The 10 miles of roads slated for reconstruction (excluding the haul route) will turn quaint high quality de facto single and double track trails into full blown logging roads. Keep in mind many "recreationists" go to Calf to view wildlife! I personally prioritize wildlife and habitat over recreation. Recreation for us is optional; for wildlife habitat is life or death.
		5	—Improving big game habitat and security should start with low hanging fruit: Keep the WHOLE WMA closed until mid May. And improve your oversight of the biennial WMA rules—through some clerical mistake the entire WMA is now unfortunately open, leading to disturbance and displacement of elk from areas on the WMA where they "should be." Displacing them from prime early spring forage areas due to human disturbance seems counter to your mandate and objectives.
		6	—Driving a feller buncher throughout the forest, especially in areas with healthy understory shrub communities and others that are weed-free, seems heavy-handed and counterproductive. Consider a greater amount of non-commercial cutting, piling, burning.

		7	—The eastern-most ridgeline (especially NE) of the project boundary, just east of Gibbons Creek, is planned for grassland restoration. For the most part it has a healthy bunch grass-sagebrush community which will be damaged with heavy machinery driving all the slopes to cut small encroaching conifers. Can this be done by hand to lessen the impact?
		8	—There are cabin remnants in the NE/E project boundary area that seems worthy as a cultural resource that your personnel have not noted. There's a pine within its borders probably well over 100 years old. Has this been inventoried?
		9	—The cumulative impacts of the enormous Gold Butterfly project along the eastern border of the Calf project should be analyzed, including the proposed road construction for Gold Butterfly.
		10	In summary, I support expanding the natural openings but your planned methods may cause too much damage directly and indirectly to the very native flora you're trying to protect or promote. Consider more hand and non-commercial work. Analyze existing biocontrols and incorporate a strong bio control aspect to the proposal. I'd be happy to help with funding. Would \$500 help?
		11	Ten miles of road reconstruction will not just adversely affect recreation but will spread weeds and impact big game movements and fragment habitat, compared to the existing condition of the "roads": bucolic, pleasant, often overgrown, and relatively wildlife-friendly.
12c	E	1	I would like to make an addendum to my prior comments on the draft EA for Calf Creek WMA.
		2	I recently hiked into the Gibbons Ck area of the project and believe there is a plan for reopening the old road in the bottom of the creek. The old roadbed is usually less than 25' from the creek and is most often only 10' wide; sometimes 8'. To allow hauling on this "road" would require more than blading in areas: it would likely require reconstruction or using fill. It appears that effectively using this road would require actions that would be in violation of Montana's Stream side law.
		3	Thank you for adding this comment to my prior ones.
13a	E		I'm writing to request that you extend the comment period from March 8th to May 15 <sup>th</sup> . The Calf Creek WMA has been closed since Dec 1 and will not be open again to the public until April 15. It is not reasonable to ask the public to make meaningful comments on an area that is closed to the public. Extending it to May 15 <sup>th</sup> would allow those interested in making comments 30 days to walk area and make fully informed comments.
13b	E		[See 12b for her and Commenter #12's comments]
14	E	1	Please extend the comment period until public has a chance to walk the units free of closures and snow.
		2	The area has too much soil compaction and past logging and grazing. Further entry of machines and saws is costly and damaging to the soils and species currently using the area as well as to the natural or as you say unnatural tree species assemblage. Some of the roads are starting to heal a bit and should not be reopened.
		3	I think it would be OK to have some burns in there, and if they burn hot in places so be it. Elk would not complain, nor would a lot of bird species.
		4	I just ask that you try not to burn up the sage and maybe rake out around some of those very old and often stunted Ponderosas.
		5	If you can not handle the way nature is responding to your past management mistakes, burn it. Fall burn would be better but I doubt you all would dare.
		6	Again please extend the comment period.
15a	E		It is my understanding that you are extending the comment period of Calf Creek and that you might do a field trip when the area is open. Can you send details? Thanks so much.
15b	E	1	Thank you for the opportunity to comment on the Calf Creek Wildlife Management Area (WMA) vegetation project. The proposal for the Calf Creek WMA calls for commercial thinning and prescribed burning to improve forage. 1100 acres will be thinned, another 400 acres will be thinned and burned, and 10.4 miles of roads will be re-opened to accommodate log trucks, skidders and feller-bunchers. Skidders and feller-bunchers will also be required to roam off-road to complete the proposed project.
		2	I have spent time in the Calf Creek WMA, riding my bicycle and hiking. It is a great place near town to enjoy the outdoors and the quiet trails covered in pine needles. Most of the trails are revegetated and hardly recognizable as old roads. Only one central double track in the meadow might need trail maintenance to remove bumps and reclaim non-trail areas. The Calf Creek WMA is such a popular place to recreate that it is, at times, hard to find a parking space.

3	The wide-open spaces are filled with knapweed. The forested areas have less weeds and more native grasses offering great forage for elk. There are hardly any small trees growing on the edges of the meadows. The forests also provide hiding cover and thermal cover for a host of animals.
4	The knapweed is probably the biggest deterrent to forage opportunities. Bringing in machines will exacerbate this problem by exposing soil and allowing for the spread of weeds. It would be pertinent to begin by controlling the knapweed. A survey of bio-controls would be a great start and the augmentation or addition of bio-controls where necessary. A comprehensive program to reduce knapweed to improve forage would increase forage without increasing weeds and subsequently reducing it.
5	A recent student thesis studied forage opportunities in the area. A look at the area's summer and winter forage and the effects of mechanized thinning, road re-opening and springtime prescribed burning on those important foods should be analyzed before planning this project. It is best to make sure that you do not do more harm when trying to do good.
6	Is there a need to improve forage? Are the elk numbers dwindling in the area? Please explain the reasoning behind the need to improve forage in the area. And please analyze the effects of the proposed management activities on all wildlife in the area.
7	Re-opening roads and hauling logs will dump sediment into the area streams that flow into Willow Creek, a sediment impaired stream that is home to threatened bull trout. One of the haul roads to be re-opened parallels Gibbons Creek. There are places where sloughing and road failures have narrowed the road to less than 9 feet in width. There is little space between the edge of the road prism and the stream. Please check into streamside management zone rules to make sure you are not violating these regulations and consult with DNRC concerning this matter.
8	Cumulative effects of this project when combined with neighboring Gold Butterfly project should be analyzed, especially their combined effect on bull trout and Willow Creek. Bull trout are protected by the Endangered Species Act. Please explain how this project will be within the laws that protect bull trout. Has dialogue concerning bull trout been initiated with the US Federal Wildlife Service? Locations of prescribed burns should also be analyzed for effects to streams and bull trout. Are there spawning areas in the project area? Is the project area home to critical habitat?
9	Please also analyze the effects of both projects on sensitive and endangered species that enjoy both areas. With simultaneous projects, where will the animals go when dispersed by logging and road building activities? What of thermal and hiding cover throughout the area for these animals? How will the combined projects affect wildlife?
10	The commercial aspect of the project will require re-opening the old, revegetated roads that have become single-track trails so they can haul the logs out on trucks. Hauling logs and reopening roads will disturb wildlife. Roads fragment habitat and spread invasive weeds. Reopening roads will also affect the human environment. Hikers and horseback riders will experience dusty roads instead of vegetated trails. Opening the roads will also invite illegal OHV travel in and out of Forest Service lands and the WMA. How will this affect wildlife?
11	Machines will disturb soil allowing new small trees to grow and encroach on the meadow areas. Now the native grasses have a good hold on the meadows precluding conifer seedlings. Machines will change that. How will you maintain the meadows with new small conifer encroachment that is nearly non-existent at this time.
12	Have reasonable alternatives been analyzed? It seems what needs to be done in the area could be done without machines or log trucks. Much could be accomplished with hand thinning, leaving logs on the ground to provide hiding cover, habitat for small creatures, and future soils. The machines will disturb and displace wildlife. Machines will also crush sagebrush and spread weeds. Please provide information on and share actual projects where commercial thinning has in fact improved forage in places similar to the project area. Please also provide a comparison of the expected results of non-mechanical thinning and mechanical thinning including all the detrimental effects of each alternative.
13	Most prescribed burns happen in the spring when it is least likely for fires to spread beyond the desired area. Studies show that cool weather burning breaks down soil over time and spring burns disturb ground nesting birds and native grass forbs. Studies also show that the combination of thinning and burning increase weeds.
14	Intact forests are the best and most efficient way to mitigate climate warming. Please take a hard look at the carbon loss that thinning, subsequent blow down, and loss of vegetation and trees from reopening roads on the carbon storage capability of the area.

		15	I am also concerned at the proximity of the 55,000 acre Gold Butterfly project. One re-opened road in the area will connect with a road that leads directly into the Gold Butterfly project area and a large clear-cut. I am concerned that there will be pressure on Fish Wildlife and Parks to allow log hauling from Gold Butterfly to pass through the Calf Creek WMA. The WMA area is for wildlife, it is not a haul road for the convenience of the Forest Service. Please make it clear in the final decision that this will not happen.
		16	Please keep me abreast of the project as it moves forward and provide the hearing date for this project with the Fish and Wildlife Commission.
		17	Thanks very much for considering my comments.
16	E		I did a fairly quick read on this proposal. Looks like a justified project with concerns for a variety of species taken into account. I see nothing about private cattle grazing on this WMA and presume there is none. Good. One consideration: How will the effects of all this activity and expense be evaluated - effects on "focal" wildlife species perhaps? Will there be any before and after data collected. Better yet, since responses of mobile animals may be affected by neighboring conditions, weather, etc. might there be any control vs. treatment data within the WMA for evaluating results? Evaluation is a critical part of "adaptive management".
17	E	1	i am very excited to hear about the restoration efforts for the grasslands and timber harvest at Calf Creek. I have been using this area for various activities throughout the 14 years that I have lived in Hamilton.
		2	Areas of concern for me are:
		3	- Invasive weeds that are taking over the grasslands.
		4	- Increased public use and erosion of the trails in addition to new trail development.
		5	- Fire danger due to unmanaged timber stands.
		6	Will the timber harvest be only in 2022 or will it cover more time? I was concerned of the impact to archery hunting but, if it is only one year, I agree with that.
18	E	1	I am in support of this habitat restoration project for the Calf Creek WMA. Due to subdivision development creeping up to the BR National Forest boundary on the East side of the valley, elk and deer winter habitat continues to shrink. Calf Creek is a Wildlife Management Area. It was established to serve the needs of elk, deer and other wildlife. As such this use must take precedence over other uses. It's important to note that the current landscape of the WMA is being restored to its historical condition in order to carry out the reason for its establishment. It's also important to note this project does not exclude other uses.
		2	Thanks for the opportunity to comment. Please let me know my comments were received.
19	E	1	Thank you for scheduling the open house on the Calf Creek project. It was informative. I appreciate Rebecca Mowry's broad knowledge and concern for wildlife.
		2	One concern I have is the erosion potential for the roads machinery will be using. The current roads in the area get deep ruts from runoff. How will the extra use affect the area? Another concern is weed management for a few years following the disruption of the soil. Will treated areas get reseeded with the native grasses to prevent an invasion of cheat grass?
		3	Thank you for allowing recreation to continue in the elk management area.
20	E		Friends of the Bitterroot respectfully submits the attached comments on the Calf Creek WMA Habitat Improvement project. Please send confirmation of receipt.
			<i>See copy of this letter at the end of this table.</i>
21	E	1	I spoke with Rebecca Mowry regarding the Calf Creek WMA Habitat Restoration Area project today. The neighboring 600 acres to the west of Calf Creek is owned by the Cumming family, and then we are west of them with 160 acres. After my conversation with Rebecca today, I felt it necessary to weigh in with public comment about the Calf Creek restoration project.
		2	Both the Cumming property and our property have forested area that needs management due to the heavy fire risk because of the mistletoe infestation. DNRC Forester Thayer Jacques visited our property last fall and agreed our land, as well as the Cumming land, is in dire need of management/thinning for the betterment of the resident wildlife and overall forest health.



	3	We are very much in favor of this project as a forest fire would be devastating to these mountains and the resident wildlife population and vegetation. There is a high potential of a forest fire due to the deadfall and declining tree health due to disease. It's already a tinder box at present. We're very concerned with the volatile conditions at hand, and if there is any fire within these mountains, it will likely devastate thousands of acres on both the Calf Creek WMA and adjoining private property owners.
	4	We are hopeful this project will move forward to allow for a healthier forest via management and thinning. If the forest is destroyed by fire, the resident wildlife population will likely move on to "greener pastures" which is a huge draw and value for this area. It is a daily occurrence for us to see the massive resident elk herd across Calf Creek, the Cumming property, as well as our property. In addition, the pheasants, quail, mule and whitetail deer, and many other birds are ever present here as well.
	5	We used to live over off N Gold Creek in Hamilton and the Roaring Lion fire in 2016 absolutely devastated the landscape and the forest health. Our trees there were ripe for the picking with the wood beadies and we would be heartbroken if Calf Creek and the adjacent parcels were to be decimated in that manner.
	6	We have been working with the Cumming family to try and see if our properties could be thinned/managed as well for the sake of the forest health. We have had a difficult time acquiring loggers willing to work on our property since they deem it a "small job."
	7	We are of the mind that if the Calf Creek project moves forward, we can hopefully utilize the logger that wins the bid for the project. Hopefully since their equipment would be in the area we could employ them to manage our forest health as well.
	8	Our goal is to minimize the risk of forest fires and truly believe this can be achieved through proper forest management and thinning. If the forest is destroyed by fire, the wildlife that we so cherish will likely move from the area and the overall health of these mountains would be affected for generations.
	9	If you could please keep us in the loop with any forward momentum with the project, as well as which contractor wins the bid to do future work, we would really appreciate it.
22a	E	I'm writing regarding Calf Creek WMA & the proposed restoration/logging project. I only just received notice of this proposal and would appreciate an extension of the comment period to 1 month after the area is open to the public in May. I live close by & have recreated on the area for the last 25 years so this is a very important place for the public and the wildlife alike. There are several issues with this plan that the public will want to review and visit the areas before commenting appropriately. For example, the proposed cutting of 18' diameter Ponderosa in areas where other species are preferred, expanding (improving) roads and no discussion of the actual science related to how this helps the elk population. Please consider extending the comment period to June so the public has time & awareness of this project and can review the areas of the project.
22b	E	1 Good morning, I've reformatted my letter for easier readability.
	2	Comments on the Draft Environmental Assessment for the Calf Creek Wildlife Management Area Habitat Restoration Project (February 2021):
	3	I have lived within 1 mile of Calf Creek WMA for 25 years and have spent many many day a hiking and biking the area and I'm pretty familiar with it. What draws me to Calf Creek is the stunning beauty, the chance to see wildlife, wildflowers, non-weed infested native landscapes, sweeping views of the valley and sky, and it's proximity to my house. My daughter & I have shared time hiking there since she was born 22 years ago. It's a special place in the valley for it's intrinsic value, aesthetic and it's abundance of space for wildlife & the native landscape to thrive. I recognize that there are concerns about the "encroachment" of trees in the elk-favored grasslands, fire concerns, and a desire to increase preferred species.
	4	Specifically, my concerns about this project stem from:
	5	a nebulous desired outcome of improving elk habitat,
	6	using unproved practices of using commercial logging to improve forage,
	7	the potential for a significant increase in weed populations (knapweed & cheatgrass especially),
	8	the expansion of existing roads from what are now tranquil trails for wildlife and humans,
	9	the potential for those roads to be used by the state to haul logs for the Gold Butterfly project,
	10	the lack of a comprehensive review of the combined impacts of the Gold Butterfly and Calf Creek projects,

		11	the use of commercial logging as a means to fund the FWP forest management program at the expense of the very wildlife this project presumes to help,
		12	the proposed use of heavy machinery & mechanical extractive equipment, the introduction of aspens where water is a increasingly scarce resource
		13	and most importantly, the belief that by interfering in the natural process of a native landscape that the wildlife will be better off than if we left it alone.
		14	What I want to see happen is a shift in focus to how to improve life for the elk and other creatures that inhabit Calf Creek using the least intrusive, least disruptive and least expensive methods. If anything, keeping Calf Creek closed until mid-May seems like a simple start. Working on the existing weed infested areas with biocontrol and IPM, using non-commercial treatments if any tree removal is required and provide more alternatives than no action and this flawed proposal.
		15	I appreciate the genuine desire to help the elk and Rebecca & Jason seem passionate about their project. However, when we take the personal and personnel effort out of the equation, I think the truth will be revealed, that this project does not justify the time, energy, money, disturbance, disruption and destruction it will create.
		16	Thank you for your time and appreciate the opportunity to comment.
23	E	1	I would like to recommend the following regarding the Calf Creek Wildlife Management Area (WMA) proposal:
		2	1. Do not use machines in the Calf Creek WMA
		3	2. Knapweed should be controlled before considering ground disturbing management activities.
		4	3. The area's winter forage should be surveyed and analysis completed on the effects of mechanized thinning and burning on all big game winter food sources.
		5	4. Cumulative effects from the neighboring 55,000 acre Gold Butterfly project should be analyzed before this project moves forward.
		6	5. Recommend only non-commercial treatment: non-commercial work could meet project objectives without increasing weeds, disturbing wildlife, and turning popular trails into dusty roads.
		7	Overall, I would like to see a comprehensive weed management program with bio-controls and trail rehabilitation where needed instead of the current proposal with commercial harvest.
		8	Thank you for your consideration.
24	E	1	I'd like to comment on the calf creek WMA habitat restoration project.
		2	I am opposed to this and don't think logging or heavy machinery have a place to be used up there. I'm a dirt biker, hiker, mountain biker and member of search and rescue. I think logging and changing the area is a bad idea.
25	E	1	I grew up in the Bitterroot Valley and I am frequent hiker and mountain biker of the Calf Creek area. I am opposed to the Habitat Restoration Project. I think that the methods proposed to be used to extract timber, build a logging road, and mitigate the influenced zones, will do more harm than good. Reading the EA report had my gut in knots. The methods used to extract logs is far too invasive. To build a 10 mile road and rip up vegetation along the way to make it 30 feet wide, is far more damaging than cutting trees that are proposed. A Commercial logging operation is not going to be as sensitive as a non-commercial thinning project. Also, look at the the invasive WEEDS such as knapweed and cheat grass from the horses that use the area. Weeds are taking over the native grasses more so an 80 year old ponderosa pine tree. Also, I have never in all my years of hiking up at Calf creek have seen an aspen tree. Aspens require water and a root system so more aspens can grow.
		2	Our recreation areas in the Bitterroot Valley are all getting hit hard with logging and burning. Larry Creek and Lake Como both had prescribed burning done this spring. Coyote Coulee has undergone a huge logging/thinning project that has a huge logging road ripped up the middle of the trail system. When is enough enough?
		3	I can see the concern and desire to help the elk, but I feel a less invasive methods can be used to minimize impact up at Calf Creek. Methods such as spot thinning treatments, burning, and working on the existing weed infested areas with biocontrol treatments would be a great start.
		4	Thank you for your time!
26	E		Is this necessary so close to an urban area? Do the benefits justify tyhe cost, and the inconvenience to the local residents? The biology seems far from proven. My opinion is that more research needs to be done before this tact is taken.
27	E	1	I am resident here in Hamilton.

		2	I have concerns about the project proposed up Calf Creek.
		3	I am most concerned about the *almost* inescapable reality there will be a significant increase in noxious weed populations in the area. Currently, the Bitterroot National Forest has a wildly low budget to manage weeds and I am concerned this area would not receive the attention it deserves.
		4	I am an avid runner and hiker and am concerned about the widening of these trails to be used as logging roads for this and future projects
28	E	0	Hello Sharon, please find attached my comments about the Calf Creek Project. Would you please email me back so I'll know you received them? Thank you.
	E	1	Thanks for the opportunity to comment on the Calf Creek WMA Habitat Restoration Project. I live approximately one mile from the project area and like many, frequent it often. I believe restoring grass/shrublands and improving elk and deer winter forage are appropriate management goals, however, I would like to see a very different approach taken.
		2	Even when I first visited the area over two decades ago, I was stuck by the abundance of spotted knapweed. This in a state management area with the primary management goal of providing winter range for elk. I would like to see far less emphasis on the removal of conifers and more emphasis on bio controls and perhaps timed small-scale mowing near the West entrance. I believe if the agency was committed to improving ungulate forage, bio controls and educational outreach programs could have been implemented years ago.
		3	Large old trees are a rarity in the Bitterroot Valley. It is not unusual to see some large Doug Fir trees mixed with Ponderosa Pine. I believe some Fir trees are appropriate for the area even though the area is relatively dry. Old Growth trees and Old Growth stands are rare in the Bitterroot due to excessive logging in the past. These trees (individuals and groups) should be left and ecological integrity should be placed ahead of economic interests. I hope you will not cut any trees over 12 inches DBH regardless of species.
		4	In the Draft Environmental Assessment, you mention dwarf mistletoe, diseases and insects. Those are naturally occurring components of the ecosystem and should not be used as an excuse to log trees.
		5	It is my understanding that the project will build or reconstruct 10 miles of roads. I walk on many of these "roads" that have long been naturally restored and are now pleasant trails that harbor a lot of life. 10 miles of roads in a project area of 1,116 acres seems like an incredibly dense network of roads. Are there standards for road densities in this type of habitat or MA? I hope those trails above and near Stuart Creek will be left alone. This area from my observations, actually has the least amount of knapweed. It seems removing conifers and opening the area up will encourage spotted knapweed growth as the area will be exposed to more sunlight, be drier, and suffer from soil disturbance. Does work on that section and the Gibbons creek section comply with Montana Streamside Management Zone laws? If one of the goals is to restore the area to "historic conditions" then less roads seem in order. These creeks are also tributaries to Willow Creek which is a know bull trout creek and sediment impaired. Will the work have impacts on Willow Creek fisheries?
		6	The DEA states that "Noxious weed spread would be mitigated by pre-treating infestations prior to ground disturbing activities. . ." What will the pre-treatment be? The DEA also states that's equipment is to be washed before entering the WMA. This is a good idea but given the abundance of spotted knapweed in the area it seems the machinery will be transporting weeds regardless. The machinery will be transporting weeds to areas (which are few in the MA) that do not have weeds.
		7	It has been my experience that restoration, reseeding, and general reclamation work is often dependent on funding and sometimes does not happen at all or years after logging has finished. The DEA suggests restoration treatments are expected to be partially offset by the sale of merchantable timber byproduct. This does not sound like a guarantee that restoration work will happen in a timely manner. Can you provide a timeline that clearly states when restoration work will be initiated and completed? Given the amount of visitor use the area receives, I believe this will be an important component of public support.
		8	As you know the MA is adjacent to the Gold Butterfly Timber Sale. How will both of these projects influence elk and other wildlife? What are the cumulative effects of these projects? The cumulative effects of these projects should be brought forth to the public. Is the MA to be used as a haul route for log trucks associated with the Gold Butterfly project?

9	The area that is primarily located in Sections 7 and 8 along and near the Stuart Creek drainage to me is special. Those rocky outcrops, large Ponderosas and Firs, the juniper, and all the riparian variety make that area unique and valuable habitat for many plants and animals. It is also a special place for human visitors. I would hate to see machinery brought into that area. I encourage you to not allow heavy machinery in that area.
10	In conclusion, I hope you will provide another alternative that relies less on timber removal and instead focuses more on bio-controls and non-mechanical treatments. Many people use that area and I would hate to see the use of chemicals as a management tool there. Chemicals should not be used. I hope you will reconsider the project size and road reopening and provide the public with a summary of how you will monitor/evaluate the project in terms of achieving the stated goals.

## **Commenter #20's comments**

Re: Comments from Friends of the Bitterroot, regarding Calf Creek Wildlife Management Area Habitat Restoration Project

E-mailed to shrose@mt.gov Please acknowledge receipt.

Thank you for the opportunity to comment on the Calf Creek WMA Habitat Restoration Project. The following comments are submitted on behalf of Friends of the Bitterroot. They are based on the draft EA, an excellent day-long field trip led by Rebecca Mowry and Jason Parke of FWP, and several additional field days reviewing proposed actions, as well as past recreational visits to the Calf Creek WMA hiking and biking.

Montana Fish, Wildlife & Parks (FWP) proposes to conduct habitat restoration treatments on 1,116 acres of forest and grass/shrublands on its Calf Creek Wildlife Management Area (CCWMA). The Calf Creek WMA is located in the Bitterroot Valley of west-central Montana, in Ravalli County, on the west slope of the Sapphire Mountains south of Willow Creek. The nearest communities are Corvallis to the northwest and Hamilton to the west.

A significant omission in the EA is the lack of any discussion of the cumulative impacts of the CCWMA project with the enormous proposed Bitterroot National Forest Gold-Butterfly timber project, which lies adjacent to the CCWMA. Environmental effects of the two projects should be considered together. Apparently, the CCWMA project was suggested by BNF because "there may be efficiencies in doing the two projects together (from a FWP Commissioners meeting). This concerns us. For example, the roads proposed to be reopened on the CCWMA connect with logging roads on the BNF within the Gold-Butterfly project area. Although Rebecca and Jason assured us BNF logs would not be hauled through the CCWMA, we would like this confirmed in writing.

Comments below are referenced to pages in the EA:

**EA p. 11. Purpose to "improve elk and deer winter forage".** There appears to be little scientific evidence that your proposed activities will actually accomplish this objective. Papers sent by Rebecca in support of the proposed actions provide little evidence that the proposed activities will result in improvement of forage. Proffitt et al (2019) examine only fire's relationship to forage in coniferous forests and conclude:

*"Our results also indicate fire most strongly affects elk nutritional resources on summer, not winter, ranges. We found that prescribed fires within our study area did not mimic the effect of natural wildfires. In dry forests recently burned by prescribed fire, summer herbaceous forage abundance was lower than in dry forests recently burned by wildfire. Winter herbaceous forage abundance was greater for this same*

*comparison; however, larger uncertainty existed in the estimates. Both summer and winter shrub forage abundance were greater in areas burned by prescribed fire as compared with wildfire; however, shrub forage species had relatively low importance in the diets of elk."*

CCWMA was established to "provide winter range for elk" (EA, p. 1). Prescribed fire is proposed in CCWMA, but the study found that prescribed fire did not mimic the beneficial effects of natural

wildfires. They state: “while prescribed burns may be valuable for other purposes, wildfires may be more effective for improving summer and winter nutritional resources in coniferous forests.”

The Cook et al (2016) paper you sent examines elk nutrition in the mesic forests of the PNW, and has little applicability to the dry, inland forest of CCWMA.

The FWP-FS Elk Recommendations you sent recommended removing “conifers from areas that are desirable as grassland or shrubland areas; these are generally smaller trees on the edge between an opening”. They did not advocate commercial forest thinning, stating: “While maintaining multi-layered canopies may be beneficial for elk on winter range, the group recognized that treatment of hazardous fuels in areas where winter range overlaps with a wildland urban interface may trump the needs of elk.”

You state that mechanized equipment, like feller-bunchers and masticators, will accomplish much of the work. CCWMA already has an enormous knapweed problem in many of the open areas. Lavelle (1986) studied use of knapweed forage on CC and Threemile WMAs and concluded: “*Areas dominated by spotted knapweed were not utilized as major feeding areas by deer and elk. Knapweed infestations seemed more detrimental to elk than to deer because the elk diet consisted mainly of grasses (which knapweed has replaced) compared to the evergreen shrub and tree diet of deer.*” Disturbance of the soil, grasses, and shrubs by machinery will result in extensive expansion of knapweed and other invasive weeds. Similar activity—commercial logging followed by prescribed burning—in the ponderosa forest on the west side of the valley at 4000-4500’ as part of the BNF Hayes Creek project a decade ago--resulted in a hot, open forest with a ground cover of mostly knapweed that can best be described as a knapweed savanna. Your heavily mechanized treatments are likely to provide similar results. In fact, Fielder and Dobson (2006) concluded that the most effective way to increase invasive weeds in a ponderosa forest is commercial thinning followed by a prescribed burn.

Dodson, E.K., and C.E. Fielder, 2006, Impacts of restoration treatments on alien plant invasion: *Journal of Applied Ecology* **43**, 887–897.

Lavelle, D.A., 1986, Use and preference of spotted knapweed (*Centaurea maculosa*) by Elk (*Cervus elaphus*) and mule deer (*Odocoileus hemionus*) on two winter ranges in western Montana: M.S. thesis, University of Montana, Missoula, 72 p.



Winter view of the knapweed savanna created by BNF's Hayes Creek project using a feller-buncher (2010) followed by prescribed burning in spring, 2012. Elevation 4,200'.

**EA p. 11, Purpose to restore grasslands/shrublands by conifer removal:** Your 1954 air photo suggests this is necessary, but 1954 does not represent "historic conditions". Settlement by Europeans occurred about 75 years earlier. The 1954 conditions could have resulted from many different factors, including logging, farming, and/or stand-replacement wildfire. Your baseline for historic conditions should go back to at least 1910 before the fire suppression that you claim is responsible for the departure from historic conditions (itself a contentious claim in the scientific community). Almost no conifer seedlings were present in the areas of CCWMA we visited. Because ponderosa pine seeds need bare soil to germinate and thrive, perhaps the existing grasses and forbs are now preventing further encroachment. Driving heavy machinery across these areas to remove conifers will disturb soil and could have the effect of increasing seedling establishment, the opposite of your goal. A remedy would be to do the conifer removal by hand, non-commercially. This would also limit knapweed expansion and the destruction of sagebrush.





Picture shows dense ponderosa seedlings established in soil disturbed by BNF's Hayes Creek project, suggesting that your similar treatments may have the unintended consequence of increasing, rather than reducing, conifer encroachment. Elevation 4,200'.

We also observed that the marked boundaries of the GR units spill down into the more northerly and more leeward slopes. Conifers, both ponderosa and doug fir, would be expected to have been present historically in these areas, and so ecologically it makes sense to keep them, at least the larger ones. Hopefully, those boundaries were not drawn to provide more commercial timber for the contractor. Please move the boundaries of the GR units to the edges of the ridges.

**EA p. 12, Purpose to promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type:** There are no data to support the statement that, in CCWMA, fires historically burned frequently (every 5-50 years) at low to moderate severity, and have been absent during the last century due to fire suppression. First, if mountain big sagebrush (MBS) was common in pre-historic times as discussed on the field trip, then long fire-free intervals (>50 years) were also common. Baker (2006) found that MBS is intolerant of any fire, has long recovery times of 35-100 years, and has mean fire rotations of 70-200 years (MBS) or 35-100 years (mountain grasslands with a little MBP). Therefore, either fire intervals for CCWMA have been significantly underestimated, or sagebrush was not part of pre-1910 conditions. Baker (2006) went on to say *"Given these long rotations, fire exclusion likely has had little effect in most sagebrush areas."* Research by Michael Hoyt, using USFS fire

history data (included in his CCWMA comments), showed that fire suppression had nothing to do with conifer expansion in the CCWMA, so a "return to historic conditions of frequent fire" is not supported.



There is also ample evidence in the scientific literature that fire frequency has been significantly overestimated for PP forests throughout the Rocky Mountains. Longer fire-free intervals argue for less treatment prior to re-introduction of fire. See reference list below.

Baker, W.L., 2006, Fire and Restoration of Sagebrush Ecosystems: Wildlife Society Bulletin, v. 34, #1; p. 177-182.

Arno, S.F.; T. D. Peterson. 1983. Variation in estimates of fire intervals: a closer look at fire history on the Bitterroot National Forest. Research paper INT-301. Ogden, UT: USDA, Forest Service, Intermountain Forest. and Range Exp. Station.

Arno, S.F., Scott, J.H., and Hartwell, M.G., 1995, Age class structure of old growth Ponderosa Pine/Douglas Fir stands and its relationship to fire history: USFS Intermountain Research Station, Ogden Utah, Research Paper INT-RP-481, 29 p.

Baker WL (2017) Restoring and managing low-severity fire in dry-forest landscapes of the western USA. PLoS ONE 12(2): e0172288. <https://doi.org/10.1371/journal.pone.0172288>. *Frequent low severity fire rates have been overestimated in dry forests, meaning that understory shrubs and small trees could fully recover between low severity fires. Therefore less restoration treatment (thinning) is needed before reintroduction of fire.*

Baker, W.L., and Ehle, D., 2001, Uncertainty in surface-fire history: the case of ponderosa pine forests in the western United States: Canadian Journal of Forest Research. V. 31, p. 1205–1226. DOI: 10.1139/cjfr-31-7-1205. *Examines the biases in fire scar studies, and finds that average fire return interval is much longer than previously thought.*

Baker, W.L., T.T. Veblen, and Sherriff, R.L. 2007. Fire, fuels and restoration of ponderosa pine Douglas-fir forests in the Rocky Mountains, USA. Journal of Biogeography, 34: 251-269. *“Exclusion of fire has not clearly and uniformly increased fuels or shifted the fire type from low- to high-severity fires. However, logging and livestock grazing have increased tree densities and risk of high-severity fires in some areas. Restoration is likely to be most effective which seeks to (1) restore variability of fire, (2) reverse changes brought about by livestock grazing and logging, 3) ensure that degradation is not repeated.”*

Brown PM, Kaufmann MR, Shepperd WD (1999). Long-term, landscape patterns of past fire events in a montane ponderosa pine forest of central Colorado. *Landscape Ecology* 14: 513-532.

Dellasala, D.A., Ingalsbee, T., and Hanson C.T, Everything you wanted to know about wildland fires in forests but were afraid to ask: Lessons learned, ways forward: <https://forestlegacies.org/images/projects/wildfire-report-2018.pdf> *Comprehensive summary of historical wildfire compared to modern conditions, ecological benefits of wildfire, best practices for home protection.*

Fryer, Janet L. 2016. Fire regimes of Northern Rocky Mountain ponderosa pine communities. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). Available: [www.fs.fed.us/database/feis/fire\\_regimes/Northern\\_RM\\_ponderosa\\_pine/all.html](http://www.fs.fed.us/database/feis/fire_regimes/Northern_RM_ponderosa_pine/all.html)

Odion D.C., Hanson C.T., Arsenault A., Baker W.L., DellaSala D.A., Hutto R.L., Klenner W., Moritz M.A., Sherriff R.L., Veblen T.T., Williams M.A. 2014. Examining historical and current mixed-severity fire regimes in ponderosa pine and mixed-conifer forests of western North America. PLoS ONE 9: e87852. *“Our findings suggest that ecological management goals that incorporate successional diversity created by fire may support characteristic biodiversity, whereas current attempts to “restore” forests to open,*

*low-severity fire conditions may not align with historical reference conditions in most ponderosa pine and mixed-conifer forests of western North America.”*

Pierce, J., and Meyer, G., 2008, Long-Term Fire History from Alluvial Fan Sediments: The Role of Drought and Climate Variability, and Implications for Management of Rocky Mountain Forests: *International Journal of Wildland Fire*, v. 17, n. 1, DOI: 10.1071/WF07027

Swetnam, T.W., and Baisan, C.H., 1996, Historical Fire Regime Patterns in the Southwestern United States Since AD 1700, in CD Allen (ed), *Fire Effects in Southwestern Forest: Proceedings of the 2nd La Mesa Fire Symposium*, p. 11-32: USDA Forest Service, Rocky Mountain Research Station, General Technical Report RM-GTR-286. *Elevation and forest type were often weak determinants of fire frequency. Some of the variations in fire interval distributions between similar elevation or forest types were probably due to unique site characteristics, such as landscape connectivity (Le., ability of fires to spread into the sites), and land-use history. Differences in the sizes of sampled areas and fire-scar collections among the sites also limit ability to compare and interpret fire interval summary statistics.*

Williams, M.A., W.L. Baker. 2012b. Comparison of the higher-severity fire regime in historical (A.D. 1800s) and modern (A.D. 1984-2009) montane forests across 624,156 ha of the Colorado Front Range. *Ecosystems* 15: 832-847. *Recent high severity fires in Ponderosa-Doug Fir forests in Colorado are not outside historical (1800s) averages.*

In addition, there is little scientific evidence that thinning forests will reduce fire severity, and scant evidence that reducing fire severity is necessary or even desirable. Some recent research shows that canopy thinning and ladder fuel removal may actually increase fire spread and severity because it increases wind speeds and fuel dryness. See references below.

Atchley, A.L., R. Linn, A. Jonko, C. Hoffman, J.D. Hyman, F. Pimont, C. Sieg, R.S. Middleton, 2021. Effects of fuel spatial distribution on wildland fire behavior. *International Journal of Wildland Fire*. doi:10.1071/WF20096

Banerjee, T., W. Heilman, S. Goodrick, J.K. Hiers, and R. Linn, 2020. Effects of canopy midstory management and fuel moisture on wildfire behavior. *Nature, Sci Reps* 10:17312. <https://doi.org/10.1038/s41598-020-74338-9>

Coen, J.L., E.N. Stavros, and J.A. Fites-Kaufman, 2018. Deconstructing the King megafire. *Ecological Applications*, 28(6), 2018, pp.1565-1580.

Cruz, M.G., M.E. Alexander, and J.E. Dam, 2014. Using modeled surface and crown fire behavior characteristics to evaluate fuel treatment effectiveness: a caution. *Forest Science* 60:1000-1004.

**EA p. 12, Treatments would include mechanized removal:** The significant adverse impacts of commercial mechanized treatment are discussed above in these comments. All objectives can be accomplished using non-commercial activities and without heavy equipment.

As an example, we visited unit FR-1. This unit had no commercial sized timber that needed to be removed to achieve objectives (see photos below). In most areas, prescribed fire could occur without any pre-treatment. A few areas had thicker, small diameter trees that could be removed by hand thinning if necessary.



Pictures above show the open character of FR-1. Commercial harvest is unnecessary prior to prescribed fire. Either fire or non-commercial hand thinning could be used to eliminate the small douglas firs.

**EA p 12: treatments for site improvements, maintenance, and reclamation of roads in order to facilitate logging and log hauling.** You are proposing to open 10 miles of roads, many of which are shady single and double-track trails extensively used by hikers, bikers, and horseback riders (see photo below), turning them into wide dusty logging roads. Opening the road along Gibbons Creek that lies within the Streamside Management Zone (SMZ) may result in a violation of Montana's SMZ laws. Road construction is prohibited within the SMZ with only removal of vegetation and regrading of the original surface allowed. Widening or cutting and filling are prohibited. Based on our measurements, the original road prism is 10 feet, and in places it has narrowed to 8 feet. It is unsuitable for log hauling. Reconstructing/widening the road would be in violation of SMZ regulations. In addition, Gibbons Creek and several others are tributaries of Willow Creek, an already sediment-impaired bull trout fishery. Please analyze the effects of the proposed activities on bull trout in Willow Creek.

Conversion of the non-motorized trails to wide dusty logging roads will be very unpopular with local recreationalists. A better approach to roads would be to address the significant erosion and rutting problems that currently exist on the roads in the western part of the CCWMA. Leave the existing, naturally reclaimed roads as they are.





Picture shows typical trail following an old naturally reclaimed road that is planned for conversion to a logging road. This one is along Gibbons Creek, and its reopening may violate Montana SMZ laws.

**EA p. 12 Prescribed burning.** Historic wildfire would only have occurred in summer and early fall, when many grasses and forbs are dormant, so limit prescribed fire to these times. Spring burns harm ground-nesting birds and grasses and forbs that are sending up shoots. Realize that sagebrush will not survive any fire, no matter the severity (Baker, 2006). Do any prescribed burning in the late summer or fall.

**EA p. 12 Noxious weed control.** Knapweed is already a big problem in the CCWMA, so focusing on reducing knapweed would be a less costly and more effective way to improve forage than would logging. Reducing knapweed while increasing natives via biocontrols should be a centerpiece of your Calf Creek proposal. Knapweed biocontrol is fairly effective and has the public's broad support. In contrast, using herbicides typically just replaces the knapweed with cheatgrass. Use of herbicides also requires that their effects on wildlife, including all organisms in the food chain, be analyzed. Stick to hand pulling/digging and bio-controls like knapweed weevils. This area is supposedly managed for the benefit of wildlife.

**EA p. 12 Conifer removal using improvement cuts.** An "improvement cut" is a silvicultural treatment designed to grow the most trees the fastest in order to maximize timber production. Should this method be used in a WMA where wildlife is supposedly the priority? There is ample scientific evidence that humans cannot tell which individuals, or even which species, will be best adapted to survive a changing climate or future disease and insect outbreaks (see reference list below). Abandon the commercial logging activity and let nature select which trees will be fittest for survival.

Bailey, J.K., Deckert, R., Scheitzer, J.A., Rehill, B.J., Lindroth, R.L., Gehring, C., and Whitham, T.G., 2005, Host plant genetics affect hidden ecological players: links among *Populus*, condensed tannins, and fungal endophyte infection: Canadian Journal of Botany, v. 83, p. 356–361 (2005) doi: 10.1139/B05-008. *Genetic differences in Cottonwoods that cannot be visually determined have profound effects on the forest ecosystem.*

Carswell, C., 2016, Genetic research lays foundation for bold conservation strategies: High Country News, June 8, 2016. *Pinyon pines susceptible to moths turn out to be the most drought resistant and survive over healthy appearing ones.*

Christiansen, E., R.H. Waring, and A.A. Beeryman. 1987, Resistance of conifers to bark beetle attack: Searching for general relationships: Forest Ecology and Management, v. 22, p. 89-106. *Review of factors in bark beetle resistance showing complexity and suggesting it is difficult to determine visually which trees will be resistant.*

McNulty, S.G., Boggs, J.L., and Sun, G., 2014, The rise of the mediocre forest: why chronically stressed trees may better survive extreme episodic climate variability: New Forests, v. 45, p. 403-415. *Finds that the healthy looking trees are not the ones that best survive climate change due to slower growth and higher root to foliage ratios. You cannot select for adaptive trees; only nature can do that.*

Six, D.L., Biber, E., and Long, E., 2014, Management for Mountain Pine Beetle Outbreak Suppression: Does Relevant Science Support Current Policy? Forests, v. 5, p. 103-133, doi:10.3390/f5010103. *Thinning results in less live trees afterwards than just letting MPB go their course. You may actually be selecting the wrong (genetically less resistant) trees by thinning.*

Six, D.L., Vergobbi, C. and Cutter, M., 2018, Are survivors different? Genetic-based selection of trees by mountain pine beetle during a climate-change-driven outbreak in a high-elevation pine forest: Plant Science, Plant Sci., 23 July 2018 | <https://doi.org/10.3389/fpls.2018.00993> *Genetic differences that cannot be determined visually determine the variable susceptibility to bark beetles in lodgepole pine.*

Sthultz, c.M., Gehring, C.A., and Whitam, Deadly combination of genes and drought: increased mortality of herbivore-resistant trees in a foundation species: Global Change Biology, v. 15, 1949–1961, doi: 10.1111/j.1365-2486.2009.01901.x *The least vigorous pinyon pines with growth slowed by moth caterpillars had much greater survival rates during drought than healthy appearing trees.*

**EA p. 13 Ground-based logging equipment would be required to operate under relatively dry, frozen, or snow-covered conditions in order to minimize impacts to soil and vegetation.** How will FWP ensure this requirement will be followed? CCWMA does not generally experience long frozen or snow-covered conditions. On BNF projects, these requirements are often specified, but rarely enforced, resulting in significant, widespread adverse soil impacts.

**EA p. 13 To minimize the spread of noxious weeds, all equipment would be cleaned and inspected by FWP.** With all the noxious weeds already present at CCWMA, this requirement will be senseless. BNF projects always include the same requirement, and it does nothing to prevent weed invasions. While noxious weeds like knapweed and cheat grass are difficult to eradicate, it is relatively easy to prevent their spread. Simply avoid soil and ground disturbance, which again argues for non-commercial treatments only.

**EA p 13 Unit prescriptions.** Add an upper diameter limit for harvest of 16 dbh to live trees in addition to the one for snags. This would ensure that most large trees are retained, in line with the ICO principles

Jason says he is using. We support the ICO principles and hope that you do not drop them to qualify for funding as a fuel reduction project.

**Summary:** Treatment of 1,116 acres is nearly half of the CCWMA. The choice between the No Action and Preferred Alternatives is an all-or-nothing approach. We would prefer an alternative be developed which concentrates on the control/eradication of the two most prevalent invasive plants, spotted knapweed and cheatgrass using biocontrol and non-mechanical methods (hand removal). Because the efficacy of the proposed conifer removal and forest thinning to improving wildlife habitat is unproven and may have unintended detrimental consequences, FWP should apply these measures slowly and carefully. Project size should be reduced, and FWP should apply conifer removal and forest treatments carefully and non-commercially, without heavy machinery and road reopening. This would allow monitoring and evaluation of results and the opportunity for adaptive management, avoiding the Severide Principle that states: "Most problems begin as a solution". Try not to let your solutions become the next big problem.

We ask that you please keep us fully informed of all further developments on the Calf Creek WMA project proposal. It is our intention that the references cited in this letter be included in the project file. Please contact us if you need a copy of any of the cited references.

Sincerely,

Jim Miller, President  
Friends of the Bitterroot  
PO Box 442  
Hamilton, MT 59840  
millerfobmt@gmail.com

## APPENDIX B

*Please see separate “Appendix B” file for this Figure.*

**Figure A1.** Revised “Calf Creek WMA project map for proposed habitat restoration project” (substitute for Figure 2 in the Draft EA, page 3)

## APPENDIX C

**Table C1.** Treatment units by acres, treatment type, and treatment method for the proposed habitat restoration project for Calf Creek WMA and its EA.

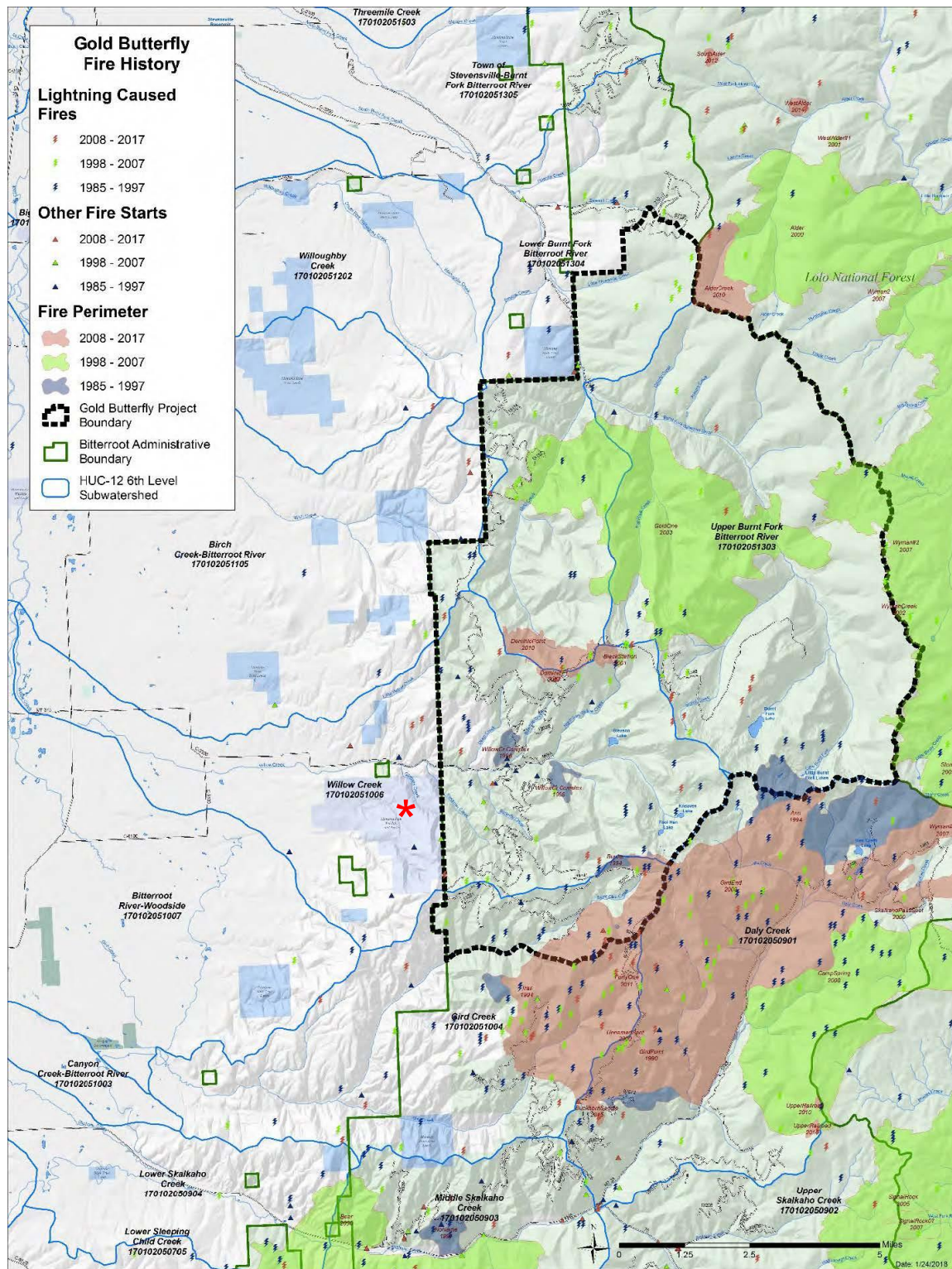
Unit	Acres	Treatment type	Treatment method
GR-1a	11.4	Grassland Restoration	Non-mechanized
GR-1b	14.0	Grassland Restoration	Non-mechanized
GR-1c	45.5	Grassland Restoration	Non-mechanized
GR-1d	15.3	Grassland Restoration	Combination
GR-2a	98.3	Grassland Restoration	Non-mechanized
GR-2b	42.2	Grassland Restoration	Combination
GR-3	37.2	Grassland Restoration	Non-mechanized
GR-4	50.3	Grassland Restoration	Combination
GR-5	24.9	Grassland Restoration	Non-mechanized
GR-6a	277.8	Grassland Restoration	Non-mechanized
GR-6b	56.2	Grassland Restoration	Combination
GR-7	15.8	Grassland Restoration	Non-mechanized
FR-1	14.3	Forest Restoration	Combination
FR-2	57.0	Forest Restoration	Combination
FR-3	63.6	Forest Restoration	Combination
FR-4	4.0	Forest Restoration	Combination
FR-5	33.9	Forest Restoration	Combination
FR-6	41.6	Forest Restoration	Combination
FR-7	21.4	Forest Restoration	Combination
FR-8	8.4	Ponderosa Pine Savannah Restoration	Non-mechanized
FR-9	38.8	Ponderosa Pine Savannah Restoration	Non-mechanized
FR-10	47.3	Ponderosa Pine Savannah Restoration	Non-mechanized
FR-11	68.8	Ponderosa Pine Savannah Restoration	Non-mechanized
FR-12	28.1	Forest Restoration	Non-mechanized

**Table C2.** Roads by length, road work, and log hauling for the proposed habitat restoration project for Calf Creek WMA and its EA

Road	Length (mile)	Road work	Is this a log-haul road?
A	2.63	Maintenance/Minor reconstruction	Yes
B1	1.93	Brushing	No
B2	0.10	Brushing	No
C	1.28	Brushing	No
D	0.29	Maintenance/Minor reconstruction	Yes
E1	0.42	Maintenance/Minor reconstruction	Yes
E2	0.65	Brushing	No
F1	1.30	Maintenance/Minor reconstruction	Yes
F2	0.66	Maintenance/Minor reconstruction	Yes
G1	0.36	Maintenance/Minor reconstruction	Yes
G2	0.70	Brushing	No
G3	1.06	Brushing	No
H1	0.19	Maintenance/Minor reconstruction	Yes
H2	0.22	Maintenance/Minor reconstruction	Yes

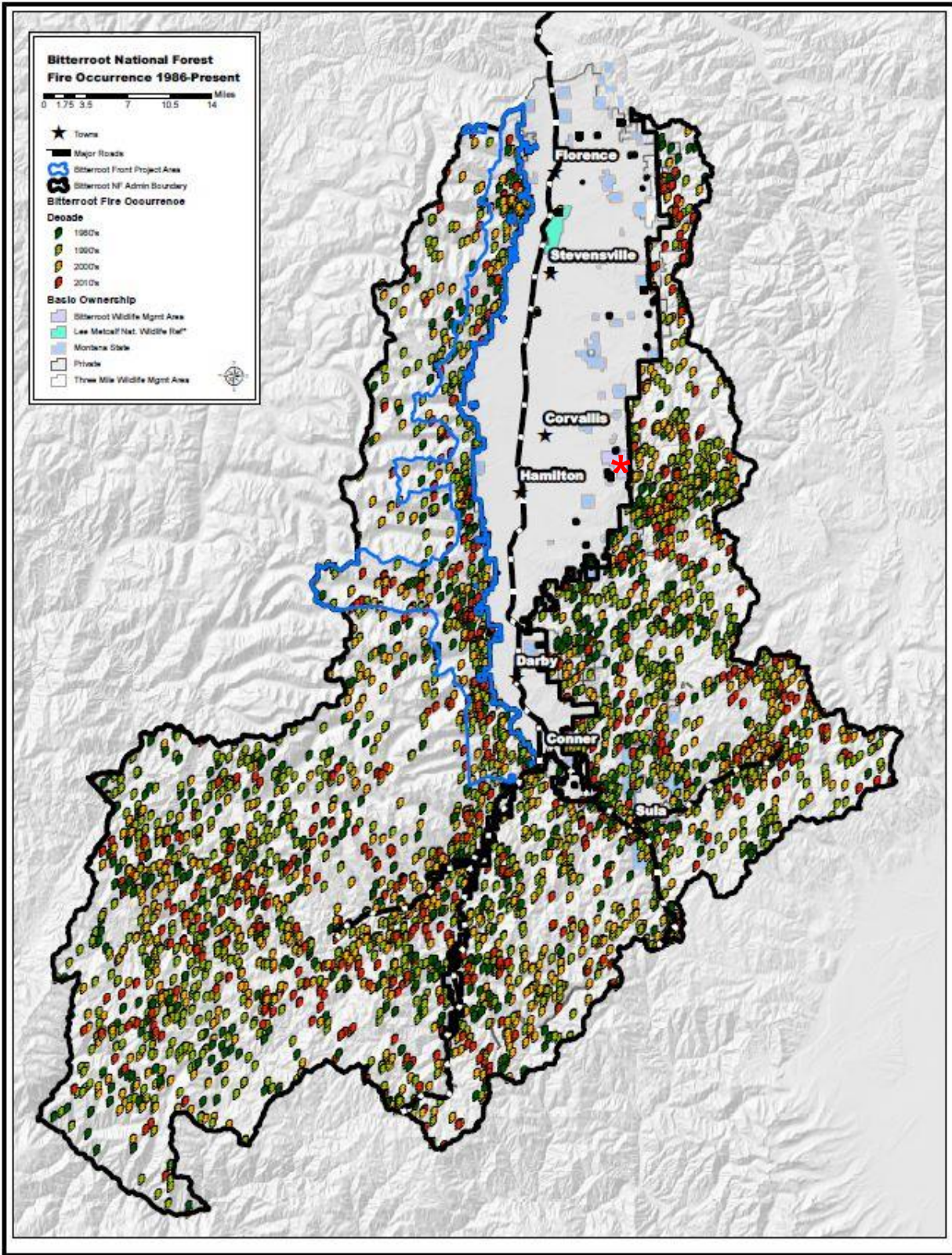


## APPENDIX D



**Figure D1.** Fire history (1985-2017) in and near the area proposed for the Bitterroot National Forest's Gold Butterfly (vegetation management) Project. Calf Creek WMA is indicated by a red asterisk \*.





**Figure D2.** History of fire occurrence in and near the Bitterroot National Forest, approximately 1986-2010s. Calf Creek WMA is indicated by a red asterisk \*.