Draft Environmental Assessment

Calf Creek Wildlife Management Area Habitat Restoration Project

February 2021

Region 2
Montana Fish, Wildlife & Parks
3201 Spurgin Road, Missoula, MT 59804

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Project Overview

Proposal

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 submerchantable) 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.

Area Description

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. The farming, ranching and recreation/tourism industries are staples of the local economy. Missoula is the nearest major population center, located about 40 miles north of the CCWMA. Gibbons, Calf, and Stuart creeks, and Charley's Gulch are named streams on the WMA, which are tributaries to Willow Creek, the principal watershed of the WMA.

The CCWMA was created with an initial acquisition of 1,967 acres in 1960. Several additions made through 2011 brought the total size of the WMA to 2,416 acres. The Calf Creek WMA was acquired to provide winter range for elk that were restored to the Sapphire Mountains earlier in the twentieth century. The CCWMA is approximately half montane forest and half montane grass/shrubland. The forests are primarily dry, mixed conifer forest type dominated by ponderosa pine and Douglas-fir that transition to a mix of subalpine fir and lodgepole above 5,500 feet. Grass/shrublands are primarily bluebunch wheatgrass/Idaho fescue interspersed with mountain big sagebrush and a variety of forbs, shrubs, and graminoids.

A migratory elk herd uses the CCWMA for winter range 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[1] (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. This opportunity was achieved primarily through the efforts of local horseback riding groups, in return for their assistance maintaining trails and providing a port-o-potty at the parking area. CCWMA is walk-in only and borders the Weber Ranch (held in conservation easement with the Bitter Root Land Trust) and the Frost Ranch (currently a popular Block Management Area).

[1] A Species of Concern is a native animal (or plant) breeding in Montana that is considered to be "at risk" due to declining population trends, threats to its habitats, and/or restricted distribution. The purpose of Montana's SOC listing is to highlight species in decline and encourage conservation efforts to reverse population declines and prevent the need for future listing as Threatened or Endangered Species under the Federal Endangered Species Act. More information is available at http://fwp.mt.gov/fishAndWildlife/species/speciesOfConcern/

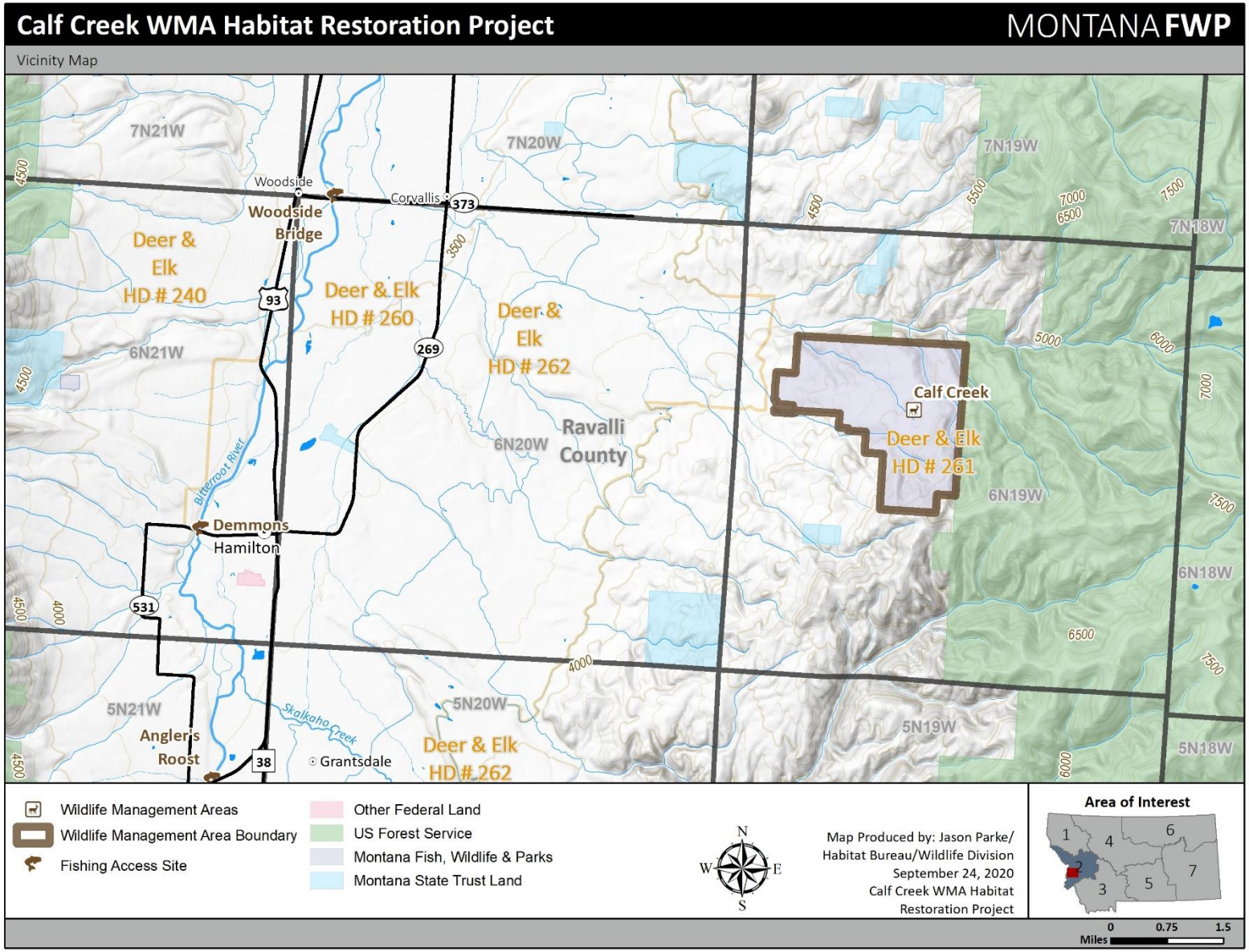

Figure 1. *Calf Creek WMA and vicinity.*

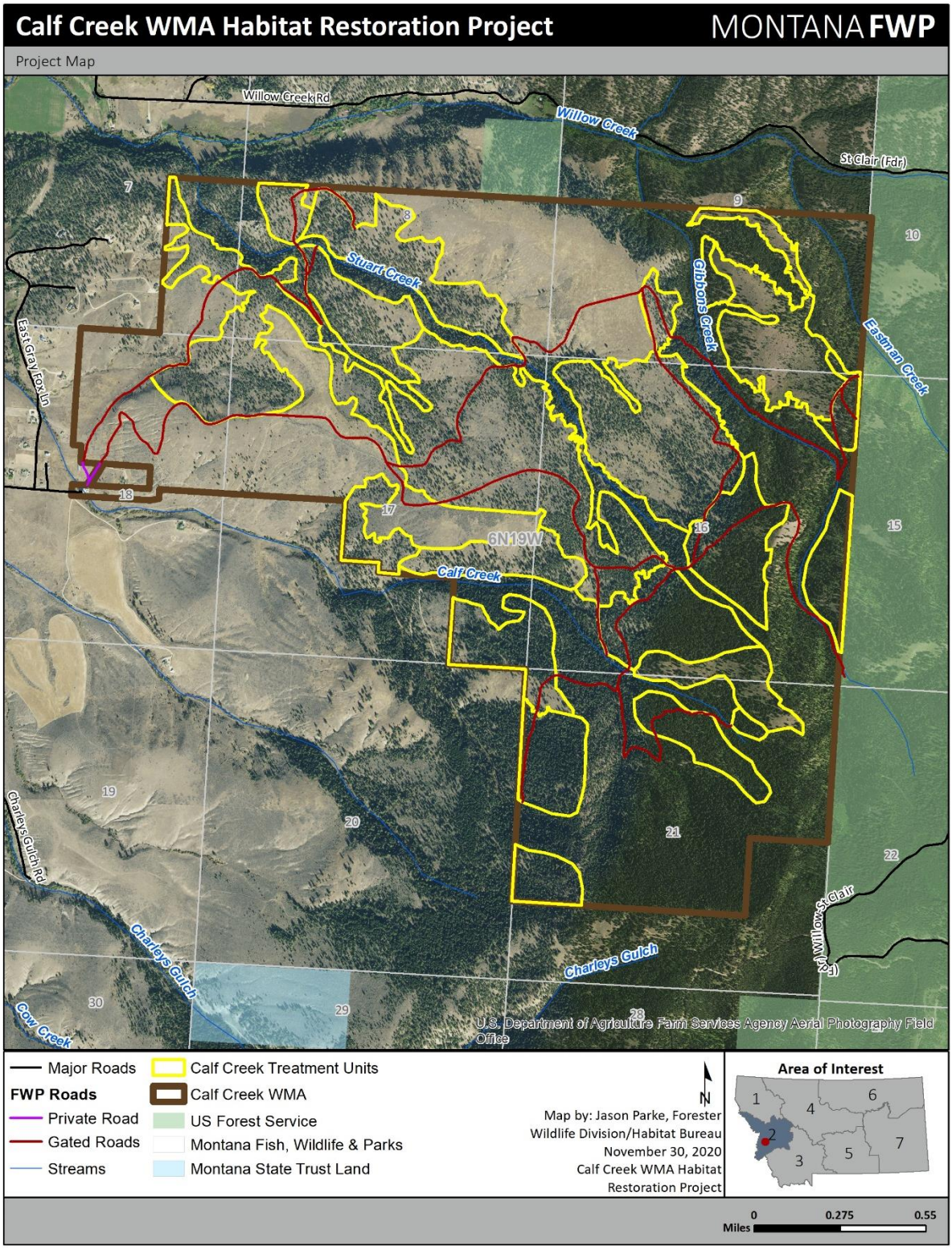

Figure 2. *Calf Creek WMA project map for proposed habitat restoration project*

Ecological Setting

Primarily in response to fire exclusion, conifers have expanded into grass/shrubland habitats and converted bunchgrass-sagebrush dominated systems to variably dense forest stands with forest associated understory species such as snowberry and pinegrass (Figures 3 through 6). 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.

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. 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 moderate. 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.

Insects and diseases have had low to moderate impacts on tree growth and mortality over the past few decades. Mountain pine beetle (MPB) (*Dendroctonus ponderosae*), Douglas-fir bark beetle (DFBB) (*Dendroctonus pseudotsugae*), western spruce budworm (WSBW) (*Choristoneura freemani*), dwarf mistletoe (*Arceuthobium* spp.), and various root diseases are endemic to the area. MPB, DFBB, and WSBW have resulted in patches of mortality, mostly at higher elevations (above 5,500 feet). Dwarf mistletoe infection is moderate to high on north slopes and at upper elevations (Figure 7). WSWB defoliation is perennially active, affecting Douglas-fir and subalpine fir, resulting in occasional mortality of suppressed understory trees.

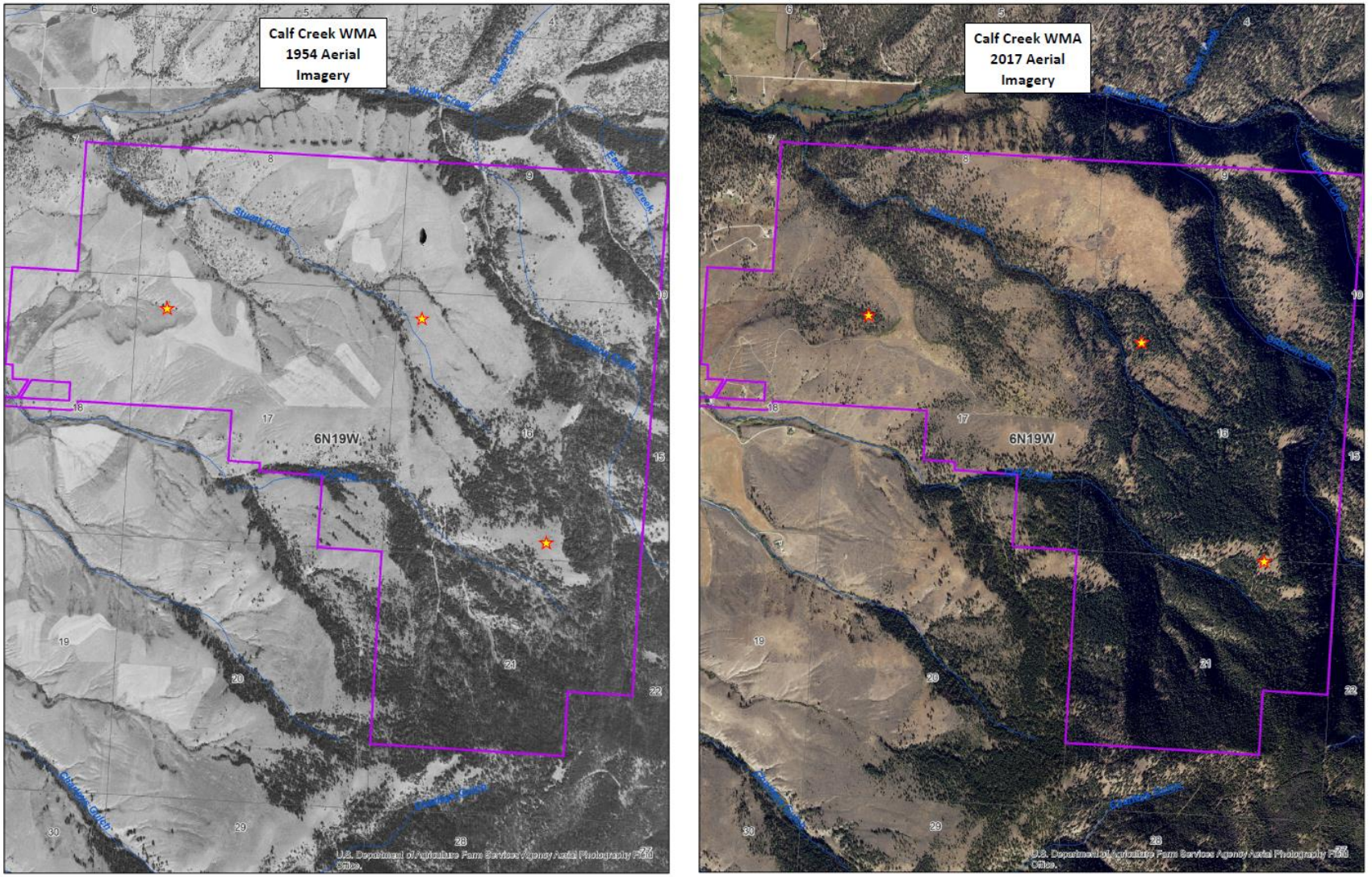

Figure 3. *Aerial photo comparison of the Calf Creek WMA (purple outline) from 1954 to 2017. Red stars were added to draw the reader's attention to areas of significant conifer expansion.*

Figure 4. *Phase 1 conifer expansion--shrub and herbaceous vegetation are dominant and conifer cone production and regeneration are low.*

Figure 5. *Phase 2 conifer expansion--conifer and herbaceous co-dominance, grasses and shrubs declining, and moderate conifer cone production.*

Figure 6. *Phase 3 conifer expansion--conifer dominance, grasses and shrubs reduced to <25% presence, trees are primary plant layer influencing ecological processes on the site.*

Figure 7. *Douglas-fir dwarf mistletoe infection leads to the development of witches' brooms in the lower portion of the crown. This native, parasitic plant affects tree growth and vigor but also provides habitat diversity and is important for a variety of small mammals and birds.*

Draft Environmental Assessment
MEPA, MCA 23-1-110 CHECKLIST

PART I. PROPOSED ACTION DESCRIPTION

1. Type of proposed state action:

Montana Fish, Wildlife & Parks (FWP) proposes to conduct habitat restoration treatments on 1,116 acres of forests and grass/shrublands on the Calf Creek Wildlife Management Area (CCWMA), located east of Hamilton in Ravalli County (Figure 1). The objectives of the proposed habitat restoration treatments are to improve elk and deer winter forage, restore grass/shrublands through conifer removal, promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type, and promote aspen growth and regeneration. Treatments would involve the removal of conifer trees (merchantable and submerchantable) through a combination of mechanical and non-mechanical treatments. (Section 8 Narrative Summary, below, includes a detailed description of the proposed action.)

2. Agency authority for the proposed action:

FWP is authorized by law to own and manage lands as wildlife habitat. The land subject to this proposal is included in the Calf Creek WMA, which was originally purchased in 1960 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. FWP is authorized to use supplemental funds from various public and private sources, which may be awarded under specific conditions for individual maintenance and enhancement projects on the CCWMA and other properties. The Montana Fish and Wildlife Commission endorsed this proposal in May 2020, allowing FWP to proceed with further development and analysis of this proposed action, including completion of this Environmental Assessment and public review.

Calf Creek WMA Management Plan (1998)

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. Management objectives relevant to this proposal include:

- Maintain and enhance native sagebrush-grasslands and forests, and prescribe management actions that mimic natural processes and enhance ecological integrity and function.
- Maintain and enhance streambank stability and ecologic complexity (horizontal and vertical) of native plant communities (e.g., aspen) and associated animal life in riparian zones.
- Provide space, cover and natural forage to support approximately 200 elk through winter and early spring.

FWP Forest Management Statutes 87-1-201(9)(a)(iv) and 87-1-621, MCA

FWP is required to implement programs that address fire mitigation, pine beetle infestation, and wildlife habitat enhancement giving priority to forested lands in excess of 50 contiguous acres in any state park, fishing access site, or wildlife management area under the department's jurisdiction. The Montana Legislature has provided FWP the means to accrue revenue from forest management activities and spend them to fund further management projects on its forested lands.

Montana Fish, Wildlife & Parks Forest Management Plan[2] (2018)

The Montana Fish, Wildlife & Parks Forest Management Plan directs FWP to manage for desired habitat conditions and public use opportunities while maintaining the ecological integrity of forests. The plan

[2] Available upon request from R2 FWP (Missoula) or FWP Wildlife (Helena) office.

provides a framework for developing desired future conditions (DFCs), identifies mechanical and non-mechanical treatments as management tools to achieve DFCs, and establishes guidelines for implementing forestry treatments on FWP forested lands.

The Montana Statewide Elk Management Plan[3] (2005)
The Montana Statewide Elk Plan directs FWP to improve elk habitat through projects designed to improve vegetative diversity and to maintain or increase carrying capacity on winter range. This proposed project would work toward meeting this goal by removing conifers encroaching on historically bunchgrass dominated montane grasslands, increasing recruitment of forage and browse species, and promoting aspen growth and recruitment.

Montana's State Wildlife Action Plan[4] (2015)
The State Wildlife Action Plan (SWAP) identifies ecological community types, geographic focal areas, and individual plant and animal species in Montana with significant conservation issues that warrant attention. The SWAP is heavily focused on nongame species and the habitats they depend on and is reviewed and approved by the US Fish and Wildlife Service via updates implemented every 10 years.

The Calf Creek WMA is included within the Bitterroot Grasslands Tier II Terrestrial Focal Area under the SWAP. The CCWMA is one of the few large and contiguous pieces of public land within this Focal Area, which was designated to recognize the rare and threatened grassland and sagebrush benches in the western foothills of the Sapphire Mountains. Primary threats to this Focal Area include subdivision and residential development, weed infestations, conversion to agriculture, and conifer encroachment. Primary Species of Concern (SOC) known or potentially present in this area include western toad, golden eagle, Lewis's woodpecker, brown creeper, flammulated owl, great gray owl, northern goshawk, pileated woodpecker, varied thrush, long-billed curlew, fringed myotis, hoary bat, little brown myotis, northern alligator lizard, and western skink.

The CCWMA is also included in the Willow Creek-Bitterroot Tier II Aquatic Focal Area, which includes the entire Willow Creek drainage. Willow Creek is an important tributary to the Bitterroot River, and provides habitat for genetically pure westslope cutthroat trout, an SOC, as well as bull trout (a threatened species under the federal Endangered Species Act).

Approximately 35% of the project area is represented by the Tier I Montane Grassland Community Type of Greatest Conservation Need. Important threats to this community type include conifer encroachment and invasive weeds. Approximately 50% of the project area is represented by the Tier I Conifer-dominated Forest and Woodland (xeric-mesic) Community Type of Greatest Conservation Need. Important threats to this community type include replacement of ponderosa pine by Douglas-fir, as well as uncharacteristically high tree densities in forested habitats due to fire suppression.

3. Name of project: Calf Creek Wildlife Management Area Habitat Restoration Project

4. Anticipated Schedule:
Estimated Commencement Date: 12/01/2021
Estimated Completion Date: 12/31/2025, possibly extending to 12/31/2030 for prescribed fire treatments
Current Status of Project Design (% complete): 35%

5. Location affected by proposed action (county, range and township):
Ravalli County; Township 6 North, Range 19 West, Sections 7, 8, 9, 16, 17, 18, & 21.
Project is located within the Calf Creek Wildlife Management Area (Figures 1 and 2)

[3] Normally available on FWP's website, which is currently under construction (Feb 2021). Contact FWP for further information.
[4] See previous footnote.

6. Project size -- estimate the number of acres that would be directly affected that are currently:

Land Type	Affected Area (estimated in acres)	Total (acres)
(a) Developed:		
Residential	0	
Industrial	0	**0**
(b) Open Space/ Woodlands/ Recreation		**0**
(c) Wetlands/ Riparian Areas		**0**
(d) Floodplain		**0**
(e) Productive:		
Irrigated Cropland	0	
Dry Cropland	0	
Forestry	689	
Rangeland	427	
Other	0	**1,116**
Total		**1,116**

7. Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction.

(a) Permits:

Agency Name	Permits
Montana Fish, Wildlife & Parks	SPA 124 Permit
Montana Department of Environmental Quality	DEQ 318 Permit

(b) Funding:

Agency Name: Montana Fish, Wildlife & Parks
Funding Amount: 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 would 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.

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

Montana Department of Natural Resources and Conservation: Streamside Management Zone Law
Bitterroot National Forest: Wildland fire protection
Ravalli County Weed District: Noxious weed control
State Historic Preservation Office: Cultural and historic resources
Montana Fish, Wildlife & Parks: Stream Protection Act

8. Narrative summary of the proposed action or project including the benefits and purpose of the proposed action:

Proposed Action

FWP is proposing to conduct habitat restoration treatments on approximately 1,116 acres on the CCWMA for the purpose of:

- improving elk and deer winter forage,
- restoring grass/shrublands through conifer removal,

- promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type, and
- promoting aspen growth and regeneration.

Habitat restoration treatments are expected to benefit:

- elk and deer winter range foraging opportunities;
- a variety of nongame wildlife including SOC (SWAP 2015) that are dependent on open grassland and sagebrush habitats, as well as other SOC that prefer or are dependent upon old-growth stands as well as riparian areas and aspen stands; and
- compatible public use opportunities.

Proposed habitat restoration treatments include approximately 689 acres of removing conifers that have expanded into grass/shrubland habitats and approximately 427 acres of variable density thinning (a combination of overstory and understory thinning). The treatments would include:

- mechanized removal (logging, log hauling, mastication/grinding, pile and burn) and non-mechanized treatment (hand cutting and girdling with chainsaws) of merchantable and submerchantable trees;
- site improvements, maintenance, and reclamation of roads in order to facilitate logging and log-hauling, reduce erosion and sediment transport, and provide access for future maintenance and fire suppression;
- prescribed burning (pile, jackpot, and broadcast burning);
- rehabilitation of disturbed areas (such as grass seeding bare soils); and
- noxious weed control (i.e. chemical, biological, hand pulling, digging, and/or cutting treatments).

Under this alternative, FWP would hire contractors to remove conifers that have expanded into grass/shrublands over the past 80 years. Live trees over 80 years old in grass/shrublands would generally be retained as well as juniper, five-needle pines (if present), and hardwood species (such as quaking aspen and black cottonwood). Some trees greater than 80 years may be removed in order to promote aspen stands. Dead standing trees greater than 16 inches diameter at breast height (DBH) would be retained. Where aspen occurs, the majority of live conifers would be removed, retaining larger and older trees consistent with historic species composition (as evidenced by the presence of old-growth stumps and trees). In forest stands, FWP would designate trees for removal based on the stand prescription either by marking with tree paint or by contract specifications. In silvicultural terms, the prescription would be an improvement cutting where less-desirable trees would be removed to promote more desirable trees. Generally, suppressed and intermediate trees with low live-crown ratios would be removed around dominant/codominant trees with higher crown ratios.

Tree removal would be accomplished through a combination of mechanized and nonmechanized methods. Merchantable trees would be treated with ground-based logging equipment, such as feller-bunchers and skidders, that would cut and skid trees to designated roadside locations ("landings"). Tree stems would be delimbed and processed into logs. Logs would be loaded onto log trucks and hauled to local forest product manufacturing facilities. Nonmerchantable trees (trees too small to be manufactured into forest products) would be treated by either cut, skid, pile and burn; mastication; girdling; and/or felling with chainsaws.

Slash (the nonmerchantable limbs and treetops) and cull material generated from this process would be treated either by piling and burning, grinding or chipping, lop and scatter, and/or removing the material from the site. Ground disturbance is expected on skid trails and at landing areas. Any ground

disturbance (exposed, displaced, or compacted soils) would be rehabbed and seeded with a native grass seed mix. Contractors hired to do this work would be required to adhere to Montana Forestry Best Management Practices (BMPs). FWP would develop a site-specific treatment plan for each site with contractors hired to do this work. This plan would identify resource protection measures to minimize impacts to the site. FWP would oversee the activities while they are on-going to ensure compliance with the plan and to minimize resource impacts.

Access to the project areas would be from existing roads. Roads would be upgraded to the minimum extent necessary to facilitate logging and log hauling while meeting BMPs. This would involve clearing trees and brush along roads (approximately 10 feet each side from the center of the road), blading the road surface, constructing drainage features (such as drain dips, waterbars, or lead-out ditches) to prevent erosion, and widening of curves. Two existing culverts on Stuart Creek are failing and would need to be replaced. Temporary "jump-up" roads (relatively short spur roads) may be needed in some areas. These would be located on flat ground and where excavation could be avoided. Ground impacts, such as more severe soil compaction or soil exposure, may be greater on these spur roads. These would be reclaimed and blocked to prevent unauthorized motorized use. Road work would be expected to take approximately 6 to 8 weeks and would occur during periods when the soil moisture is suitable to allow for adequate shaping and compaction. Following completion of the logging operation, roads would be seeded with a native grass seed mix and stabilized to prevent erosion.

The operating period for the mechanized treatments would be from December 1 through April 1 or July 1 through mid-October (mechanized treatment would be avoided during the general rifle hunting season). 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. Hand-felling and other clean-up/rehab activities, such as prescribed burning, grass seeding, and noxious weed treatment could potentially occur throughout the year. If slash is piled and burned, burn piles would be located in openings away from residual trees and neighboring property lines. Burning would be conducted in accordance with Airshed 4 smoke management restrictions, open burning seasons, and applicable state and county regulations.

Road work and logging activities would comply with Montana Forestry BMPs, the Montana Streamside Management Zone law, and the Montana Stream Protection Act. To minimize the spread of noxious weeds, all equipment would be cleaned and inspected by FWP before moving onto the FWP lands. Exposed bare mineral soils would be reseeded immediately and any weed infestations would be treated with herbicides indefinitely through annual WMA weed management efforts.

Broadcast burning may be used to reduce surface fuel loading, promote aspen regeneration, and benefit fire-adapted grasses, forbs, and shrubs. Further evaluations of the proposed treatment units for suitability, feasibility, and risk of broadcast burning would be conducted following mechanical treatments and burn plans would be developed in conjunction with the US Forest Service (agency responsible for fire protection on the WMA), Montana Department of Natural Resources and Conservation, and/or with qualified contractors prior to implementing burns.

Unit Prescriptions

<u>Grass/shrubland restoration units--conifer removal:</u>

- Relatively young conifer trees (less than 80 years old) would be removed from grass/shrublands. Live trees over 80 years old, which primarily occur as scattered individuals or clumps in draws or northeast aspects, would be retained, as would juniper, five needle pines, and hardwood species (such as quaking aspen and black cottonwood). Dead standing trees greater than 16 inches diameter at breast height (DBH) would be retained as well as live trees with signs of cavity nesting activity. Where the density is low (less than 20 trees per acre [TPA] on average) the

trees would be bucked, delimbed, and the slash would be scattered. Where the density is greater than 20 TPA, slash would be piled and burned or removed from the site. Trees greater than 10 inches DBH may be girdled and left as dead standing trees.

Forest restoration units--Combination overstory thinning/understory thinning:

- Suppressed overstory trees (greater than 5 inches DBH would be removed around dominant/co-dominant overstory trees. Crown health would be the primary consideration for removal. Trees with thinning crowns and low crown ratios (less than 30% live crown) would be removed to favor trees with dense crowns and higher crown ratios. Ponderosa pine would be favored to leave over Douglas-fir. Overstory trees would be retained in a clumpy, variable pattern to maintain the natural character of the stand. The average density would be approximately 70 basal area per acre (BA) but would vary from 40 to 120 BA/acre. Higher retention (80 to 120 BA/ac) would be prescribed in draws, benches, and north-east aspects. Lower retention (40 to 60 BA/ac) would be prescribed on south-west aspects and convex slopes. All snags greater than 16 inches DBH; trees with visible nesting cavities; and trees with dead, deformed, or multiple tops would be retained for their value as wildlife trees.

- Understory trees (less than 5 inches DBH) would be removed below the dripline of overstory trees and would be thinned to a variable spacing in canopy gaps. Ponderosa pine would be favored over Douglas-fir. In general, the largest trees (greatest DBH, tallest) with the highest crown ratio would be retained and relatively smaller trees with lower crown ratios would be cut. The average density would be approximately 50 TPA with higher retention in draws, benches, and north-east aspects and lower retention on south-west aspects and convex slopes.

General Guidance

1. Wildlife habitat comes first.
2. Components of wildlife habitat to be left untreated (if existing) or recruited (if not existing) are coverage of aspen and upland willow, big trees (living and snag recruits), and dense forest cover on north aspects or in the steeper draws.
3. Thinning patterns would result in an irregular mosaic with relatively short sight distances.
4. Designated cut-trees would be marked or cut by description, under careful monitoring by the FWP Forester and other staff.
5. To the extent possible, burn piles would be located in openings within treated stands where little ground cover currently exists to minimize impacts to native rangeland.
6. Ground-based timber harvest would be restricted to slopes less than 40%. Cable-yarding would be required on slopes greater than 40%. Timber harvest in areas with vulnerable soils or in grass/shrublands is encouraged in winter, when the ground is frozen and snow-covered and less likely to be damaged by logging activities.
7. Timber harvest would not occur during the general big game hunting season or on weekends during archery season.
8. FWP would require contractors to post signage while activities are ongoing to minimize impacts to trail users and recreationists.
9. Operations would be avoided during periods of high bird-nesting activity (April 1 through July 1).
10. Timber harvest and road work would comply with Montana Forestry Best Management Practices (BMPs), the Montana Streamside Management Zone law, and the Montana Stream Protection Act.

11. Control of noxious weeds would be included as part of the treatments.

12. No increase in road density would occur over the long-term.

9. Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action whenever alternatives are reasonably available and prudent to consider and a discussion of how the alternatives would be implemented:

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 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.

Alternative B: Proposed Action
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.

PART II. ENVIRONMENTAL REVIEW CHECKLIST

1. Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

A. PHYSICAL ENVIRONMENT

1. LAND RESOURCES Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil which would reduce productivity or fertility?			X			1.b
c. Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?			X			1.d
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other (list)		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources (attach additional pages of narrative if needed):

1.b,d. Approximately 10.2 miles of existing roads would be improved to facilitate removal of timber and timber byproduct. These roads would be brought up to BMP specifications and all road work would comply with current BMP standards and applicable laws to minimize impacts to riparian areas and prevent sediment delivery to (or siltation of) perennial water bodies. Logging during dry periods or under winter conditions would minimize soil effects.

2. AIR Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Emission of air pollutants or deterioration of ambient air quality? (also see 13 (c))			X			2.a
b. Creation of objectionable odors?			X			2.b
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. For P-R/D-J projects, will the project result in any discharge which will conflict with federal or state air quality regs? (Also see 2a)		X				
f. Other		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (attach additional pages of narrative if needed):

2.a,b. Much of the slash and residual byproduct generated during the course of the proposed treatments would be burned on-site. FWP and the contractor would comply with Airshed 4 smoke management restrictions, Ravalli County open burning timing restrictions, and comply with inter-agency slash treatment regulations.

3. **WATER** Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X			3.a
b. Changes in drainage patterns or the rate and amount of surface runoff?			X			3.b
c. Alteration of the course or magnitude of flood water or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?			X			3.d
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?			X			3.h
I. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. For P-R/D-J, will the project affect a designated floodplain? (Also see 3c)		X				
m. For P-R/D-J, will the project result in any discharge that will affect federal or state water quality regulations? (Also see 3a)		X				
n. Other:						

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources (attach additional pages of narrative if needed):

3.a. Replacement of two failing culverts on Stuart Creek would result in minor, temporary increases in turbidity. FWP would comply with Forestry BMP's and stream permitting requirements to minimize these effects.

3.b,d. Treating the subject stands may slightly alter the rate and volume of spring runoff and retained snowpack. Due to the condition of adjacent untreated areas and that the treatment would restore forests and grass/shrublands to a condition more similar to what would have occurred under a natural fire disturbance regime, this effect is expected to be minor.

3.h. Fluid spills or leaks from heavy equipment brought in to conduct the proposed treatments has the potential to result in surface or ground water contamination. To minimize this risk, FWP would conduct inspections of the contractor's equipment prior to move-in to ensure no leaks are present and would continue to inspect equipment regularly while operations are ongoing. FWP also contractually requires its contractors to abide by state laws regarding spill reporting and clean-up.

4. VEGETATION Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?			X			4.a
b. Alteration of a plant community?				X		4.b
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?			X			4.e
f. For P-R/D-J, will the project affect wetlands, or prime and unique farmland?		X				
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Vegetation (attach additional pages of narrative if needed):

4.a,b,e. The project intent is to restore and diversify vegetation to benefit wildlife habitat conditions. The proposed action would remove conifers that have expanded into grass/shrublands, reducing moisture stress for grasses, shrubs, and forbs in the project area. Please see #8 above for a more detailed description of proposed treatments. Noxious weed spread would be mitigated by pre-treating infestations prior to ground disturbing activities, requiring equipment to be washed before entering the WMA, minimizing ground disturbance, immediately reseeding disturbed areas, and/or treating affected areas or areas at risk with herbicide for at least 3 years following treatment.

5. FISH / WILDLIFE Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?			X			5.b
c. Changes in the diversity or abundance of nongame species?			X			5.c
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?			X			5.g
h. For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (Also see 5f)		X				
I. For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (Also see 5d)		X				
j. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Fish and Wildlife:

5.b,c,g:

Near-term: Some wildlife would be temporarily displaced from the project area while treatments are ongoing. Large and mobile species would likely move to secure, adjacent habitat. Treatments would occur either in the summer/fall (July 1 through October 15) after bird nesting activity has been completed or in winter before most bird nesting activity starts (December 1 through April 1). However, some impacts to nesting birds that establish territories earlier in the year (e.g., owls and woodpeckers) are expected during the project period. These disturbances may cause abandonment of nesting territories during years when the work is occurring but are not expected to cause long-term or permanent abandonment of nesting territories for any species. Any observed active nests of native bird species would be left undisturbed by ceasing all forestry activities within 100 m of the nest site for woodpeckers and most raptors. If a golden eagle, great gray owl, or northern goshawk nest is found during project activities, all forestry activities within 500 m of the nest site will cease until a course of action is developed in consultation with the Region 2 FWP nongame wildlife biologist. Nest areas would remain undisturbed until young are mature enough to disperse from the nest site. Winter treatments may attract deer and elk to feed on the felled tops.

Long-term: The combination of thinning and clump retention would result in a redistribution of thermal/security cover for big game, which may result in temporary increases to hunter harvest mortality in various areas of the WMA. However, the overall effect would be to retain stands for security while improving understory forage quality, thus mitigating negative effects to elk survival over the long term. Habitat for songbirds, woodpeckers, raptors, small mammals, and amphibians would be enhanced with the improvement of aspen, sagebrush-grassland, and riparian communities. In forested areas, more large trees would be recruited over time and those trees would grow larger to provide thermal cover,

nesting and roosting sites for wildlife, and would eventually develop a greater snag component. Within two years following treatment (after slash treatment activities) the forested areas would be more resistant to stand replacement fire, would be more likely to benefit from burns, and the existing potential threat of decades-long habitat loss due to uncharacteristic stand replacement would be lessened. Restoration of historic stand conditions and larger diameter trees would benefit a wide range of state Species of Concern whose primary habitat limitations are centered on the scarcity of old-growth forest characteristics on the landscape.

B. HUMAN ENVIRONMENT

6. NOISE & ELECTRICAL EFFECTS Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Increases in existing noise levels?			X			6.a
b. Exposure of people to severe or nuisance noise levels?			X			6.b
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Noise/Electrical Effects (attach additional pages of narrative if needed):

6.a,b. Logging and trucking equipment would increase noise levels on the project area while activities are ongoing. Users will be subjected to noise if recreating in the area while equipment is operating. FWP would require the contractor to place signage on roads and trails to alert users to activities occurring in the area. Merchantable timber byproducts would be transported out of the WMA via the Hamilton Heights Road.

7. LAND USE Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflicted with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Use (attach additional pages of narrative if needed):

8. **RISK / HEALTH HAZARDS** Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?			X			8.a
b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?			X			8.c
d. For P-R/D-J, will any chemical toxicants be used? (Also see 8a)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Risk/Health Hazards (attach additional pages of narrative if needed):

8.a. Fluid spills or leaks from heavy equipment brought in to conduct the proposed treatments have the potential to result in release of hazardous substances. To minimize this risk, FWP would conduct inspections of the contractor's equipment prior to move-in to ensure no leaks are present and would continue to inspect equipment regularly while operations are ongoing. FWP also contractually requires its contractors to abide by state laws regarding spill reporting and clean-up.

8.c. Timber management activities are inherently dangerous. All contractors would be required to comply with federal and state safety standards for logging operations as established by the United States Department of Labor, Occupational Safety and Health Administration (OSHA; 29 Code of Federal Regulations 1910 and any other such applicable regulations promulgated by OSHA) and as required by Title 50, Chapter 71 of the Montana Code Annotated, and any regulations promulgated to implement the statutes found in that Title and Chapter of the Montana Code Annotated.

9. **COMMUNITY IMPACT** Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?			X			9.c.
d. Changes in industrial or commercial activity?			X			9.d.
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?			X			9.e
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Community Impact (attach additional pages of narrative if needed):

9.c, d, e. Jobs would be created or sustained by project work while the project is ongoing. Log hauling and contractor traffic would increase during the project. Roads and other infrastructure that would be used by contractors were designed (and would be maintained) to support commercial logging and log transport activities. Signage would be placed near trailheads and the entrance of the WMA to alert recreationists of logging activity. According to the Montana Bureau of Business and Economic Research (Sorenson et al. 2016), the harvest of a million board-feet of timber equates to roughly 10 direct jobs (in forestry, logging, wood and paper product manufacturing, and forestry support activities) annually.

10. PUBLIC SERVICES/TAXES/UTILITIES Will the proposed action result in:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				10.b
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased used of any energy source?		X				10.d
e. Define projected revenue sources		X				10.e
f. Define projected maintenance costs.		X				10.f
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Public Services/Taxes/Utilities (attach additional pages of narrative if needed):

10.b,d. The Project would be expected to increase state and local tax revenues from the sale of fuel, supplies and/or equipment and from contractor employees' income. Fuel and electricity would be required to treat stands and process the timber byproduct.

10.e. This project is not expected to generate revenue however merchantable byproducts removed may help defray the cost of treatments.

10.f. Post-treatment maintenance costs may be incurred for slash disposal and noxious weed treatments. FWP would provide funding for maintenance costs from its Forest Management Account.

11. AESTHETICS / RECREATION Will the proposed action result in:	IMPACT Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?			X			11.a.
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings? (Attach Tourism Report)			X			11.c.
d. For P-R/D-J, will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (Also see 11a, 11c)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Aesthetics/Recreation (attach additional pages of narrative if needed):

11.a. Removal of dense conifer stands may be evident from various locations in the valley. Harsh edges around treatment areas are not expected since the treatments would blend into adjacent grass/shrublands and would feather in gradually to denser timber stands.

11c. Several unmaintained hiking trails occur within the proposed treatment units and the area is popular for hiking, mountain biking, and horseback riding from April 15 through December 1. Short-term closures of trails and/or rerouting users would be required during mechanized operations and prescribed burning. FWP would require contractors to use signage to alert users to closures and detours.

12. CULTURAL / HISTORICAL RESOURCES Will the proposed action result in:	IMPACT Unknown	None	Minor	Potentially Significant	Can Impact Be Mitigated	Comment Index
a. Destruction or alteration of any site, structure or object of prehistoric historic, or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. For P-R/D-J, will the project affect historic or cultural resources? Attach SHPO letter of clearance. (Also see 12.a)						12.d
e. Other:						12.e

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Cultural/Historical Resources (attach additional pages of narrative if needed):

12.d,e. FWP consulted with the State Historic Preservation Office (SHPO). A cultural resource file search in April 2020 did not result in any records of historic or cultural resources within the project area. FWP determined that a cultural resource inventory was unwarranted at this time. If cultural artifacts were to be discovered during the project, FWP would cease activities and contact the State Historic Preservation Office, and potentially adjust the project design to avoid impacting these resources.

SIGNIFICANCE CRITERIA

13. SUMMARY EVALUATION OF SIGNIFICANCE Will the proposed action, considered as a whole:	IMPACT				Can Impact Be Mitigated	Comment Index
	Unknown	None	Minor	Potentially Significant		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources which create a significant effect when considered together or in total.)			X			13.a
b. Involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (Also see 13e)		X				
g. For P-R/D-J, list any federal or state permits required.		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Significance Criteria (attach additional pages of narrative if needed):

13.a. 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.

PART III. NARRATIVE EVALUATION AND COMMENT

FWP proposes to conduct habitat restoration treatments on approximately 1,116 acres of the Calf Creek WMA in Ravalli County. If approved by the Montana Fish and Wildlife Commission, the work would begin as early as December 2021. The objectives of the project are to improve elk and deer winter forage, restore grass/shrublands through conifer removal, promote stand conditions that would allow fire to burn at low-severity appropriate for the habitat type, and promote aspen growth and regeneration. FWP expects this project to benefit elk and deer winter range foraging potential, a variety of nongame wildlife including Species of Concern (MFWP 2015) that are dependent on old-growth ponderosa pine stands, fire suppression efforts in the event of a wildfire, the local timber industry, and compatible public-use opportunities. Adverse impacts to the physical and human environment are expected to be minor and temporary while the positive impacts are expected to be substantial and prolonged. The purpose 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.

PART IV. PUBLIC PARTICIPATION

1. Describe the level of public involvement for this project if any, and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?

The public would be notified as follows, to comment on the proposed Calf Creek WMA Forest Habitat Restoration Project, including its draft EA and alternatives:

- A news release would be prepared and distributed to a standard list of media outlets interested in FWP Region 2 issues. This news release would also be posted on FWP Region 2's website http://fwp.mt.gov/regions/r2/.
- One legal notice would be published in each of these newspapers: *Bitterroot Star* (Stevensville), *Independent Record* (Helena), *Missoulian*, and *Ravalli Republic* (Hamilton).
- Copies would be available at the FWP Region 2 Headquarters in Missoula and the FWP State Headquarters in Helena.
- Copies of this environmental assessment would be mailed (or notification of its availability emailed) to neighboring landowners and other interested parties (individuals, groups, agencies) to assure their knowledge of the Proposed Action.
- Public notice on FWP's webpage: http://fwp.mt.gov ("News," then "Recent Public Notices"). The Draft EA would also be available on this website.

Copies of this EA may be obtained by mail from Region 2 FWP, 3201 Spurgin Rd., Missoula MT, 5980; by phoning 406-542-5540; by emailing shrose@mt.gov; or by viewing FWP's website http://fwp.mt.gov under Public Notices.

This level of public notice and participation is appropriate for a project of this scope having few physical and human impacts, many of which can be mitigated.

2. Public Comment Period

The public comment period will extend for thirty (30) days beginning February 5, 2021. Comments must be received by FWP no later than March 8, 2021.

Comments can be mailed to the address below:

Region 2 FWP
Attn: Calf Creek Forest EA
3201 Spurgin Rd
Missoula, MT 59804

Or emailed to Sharon Rose at shrose@mt.gov

PART V. EA PREPARATION

1. **Based on the significance criteria evaluated in this EA, is an EIS required? (YES/NO)?** No

   If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.
   Based upon the above assessment which has identified a limited number of minor impacts to the physical and human environment that would be either for a short duration or can be mitigated below the level of significance, an EIS in not required and an environmental assessment is the appropriate level of review.

2. **Name, title, address and phone number of the person(s) responsible for preparing the EA:**

   Rebecca Mowry
   Bitterroot Area Wildlife Biologist, Montana Fish, Wildlife & Parks, Region 2
   1801 N. 1st Street, Hamilton, MT 59840
   (406) 363-7161

   Torrey Ritter
   Region 2 Nongame Biologist, Montana Fish, Wildlife & Parks
   3201 Spurgin Rd, Missoula, MT 59804
   (406) 542-5551

   R. Jason Parke
   Forester, Montana Fish, Wildlife & Parks
   P.O. Box 200701, Helena, MT 59620
   (406) 444-7329

3. **List of entities consulted during preparation of the EA:** None.

REFERENCES CITED

Sorenson, C. B., C. E. Keegan, T. A. Morgan, C. P. McIver, and M. J. Niccolucci. 2016. Employment and wage impacts of timber harvesting and processing in the United States. Journal of Forestry 114 (4): 485-493.