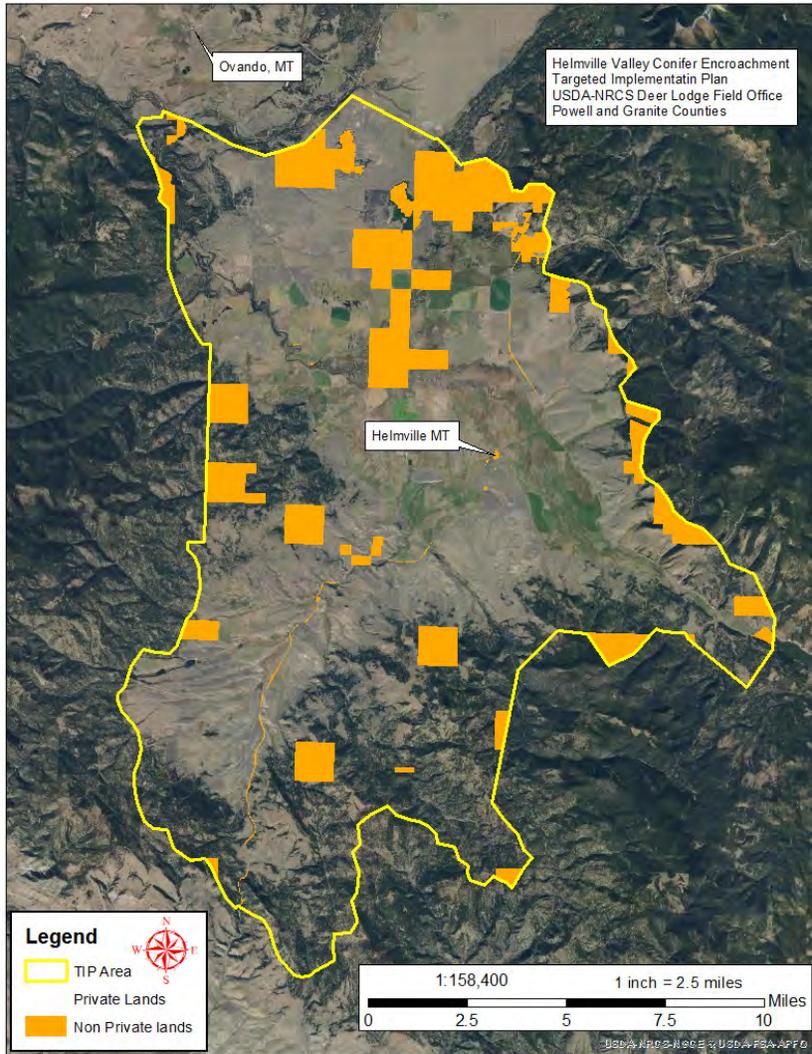


# Helmville Valley Conifer Encroachment Targeted Implementation Plan



## **Goal Statement:**

The goal of this Targeted Implementation Plan (TIP) is to restore intermountain grasslands by assisting private landowners in the Helmville Valley with the removal of Rocky Mountain juniper (*Juniperus scopulorum*) and Douglas-fir (*Pseudotsuga menziesii*) which are encroaching upon native rangeland. The primary resource concern we will address is plant pest pressure. Conifer encroachment due to fire suppression has resulted in a decrease in high quality grassland and sagebrush habitat. Conifer removal will also increase desirable plant productivity and health, provide additional forage for livestock and wildlife, and improve hydrologic functions in the project area.

**TIP Summary:**

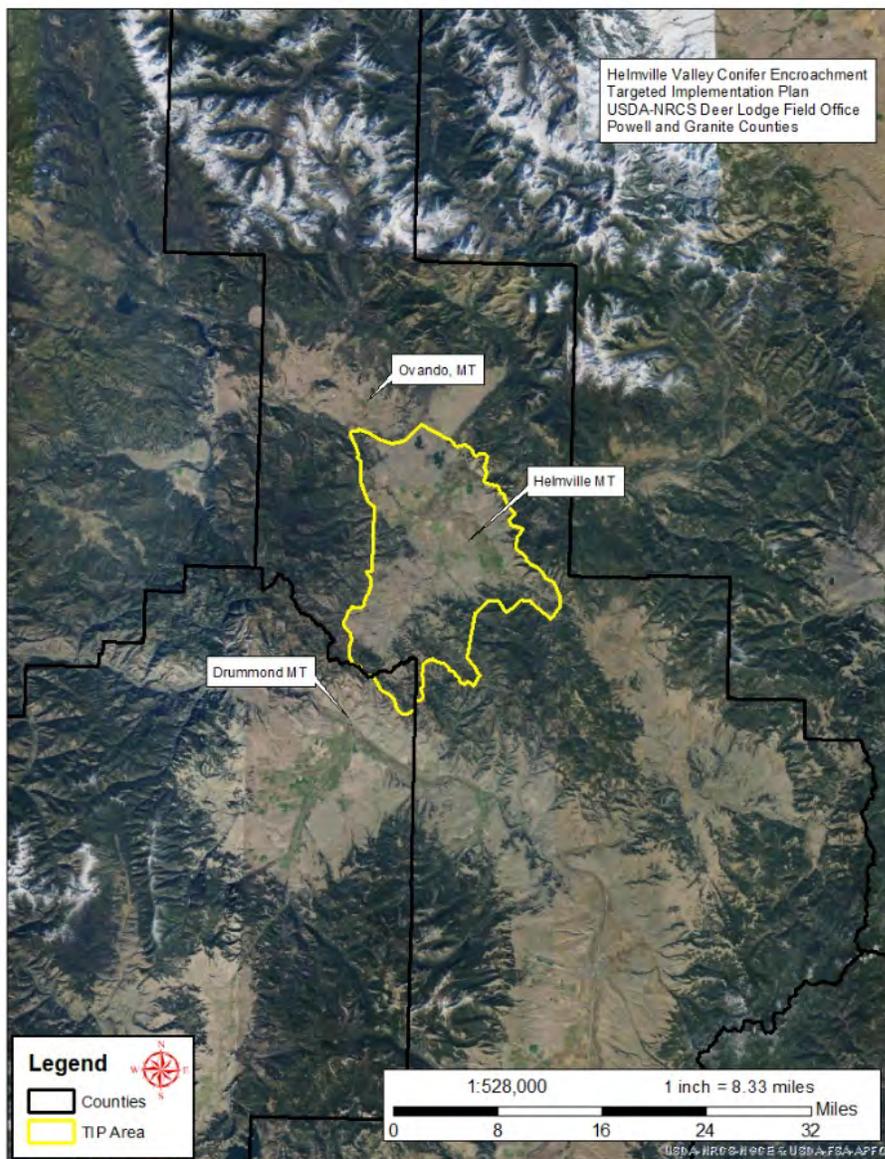
The Helmville Valley Conifer Encroachment TIP will treat the priority resource concern of Plant Pest Pressure by removing encroaching conifers from intermountain grasslands. This will be accomplished by implementing the conservation practices Brush Management, Forest Stand Improvement, Woody Residue Treatment, and Herbaceous Weed Treatment. The TIP is needed because conifer encroachment has increased in this high priority conservation area over time due to fire suppression. NRCS will provide assistance to private landowners to treat 6,300 acres of conifer encroachment. This will treat encroachment on approximately 50% of the private rangeland in the TIP area with encroachment resource concerns. We are requesting \$300,000 in year one, followed by \$300,000 in each of years 2 through 5. Six different public and private partners have assigned \$133,000 in funding to treating conifer encroachment in the area. This TIP will not only physically restore intermountain grassland but will strengthen the concept and emerging local culture of actively managing conifer encroachment.

**Location:**

The Helmville Valley consists of the lower elevation areas surrounding the town of Helmville, MT. The valley is bound on the north by the Ovando Valley, on the east by the Nevada Mountains, and on the south and west by the Garnet Mountains. More specifically, this TIP area is bound on the north by Highway 200 and the North Fork of the Blackfoot River, on the east by the Nevada Mountains, and on the south and west by the Garnet Mountains. This geographic area lies primarily in Powell County,

within the North Powell Conservation District (NPCD). A small portion of Granite County is also included due to ecological connectivity. The entirety of the proposed TIP area consists of private land, except for a few sections of Montana State Trust Land and U.S. Fish and Wildlife land. Although the boundary of the TIP area encompasses over 120,000 acres, aerial photography interpretation and ground truthing suggests about 12,000 acres of these acres are affected by conifer encroachment. We delineated this area based on the following factors: ecological connectivity of portions of the Nevada Creek, Blackfoot River, and North Fork of the Blackfoot River drainages; location of ready, willing, and able landowners; and workload management.

Map 2: Helmville Valley TIP Area



**Overview/Background Information:**

The encroachment of Rocky Mountain juniper and Douglas-fir on rangeland has been a problem in the Helmville Valley for generations. Decades of wildfire suppression and absence of anthropogenic fire has resulted in conifer encroachment and is causing multiple resource concerns on rangeland throughout the western United States. Scientific evidence suggests that intentional fires set by native peoples in the West were used as an important tool to deter the encroachment of conifer species and improve the growth of grass and beneficial shrubs. The lack of a historical fire regime has contributed to a large-scale change in Western grassland landscapes.

Conifer encroachment decreases necessary water quantity and quality for grasses and forbs on rangeland, leading to degraded ecosystems and changing plant communities. Conifers also out-compete desirable perennial grasses and shrubs, resulting in less available forage for livestock and wildlife.

Aerial A reduction in perennial grass cover also contributes to increased soil erosion issues. Soil erosion can lead to noxious weed infestations and competition from undesirable grasses.

In addition to the concerns mentioned above, the continued expansion of conifers onto rangeland can directly decrease favorable forage production. This loss of forage production not only affects livestock, but also negatively affects local wildlife populations ranging from large ungulates to small grassland birds and rodents.

Rocky Mountain juniper and Douglas-fir encroachment has recently been identified by the NPCD as a resource concern of high importance within the Helmville Valley watersheds. Both landowners and agencies are beginning to realize that the time for restoring native grassland vegetation is now. Delaying effective conservation measures could result in grassland ecosystems that have been degraded beyond repair due to permanent vegetation and seed bank alterations. There is also emerging interest



*Figure 1: Conifer encroachment 1995*



*Figure 2: Conifer encroachment 2015*

among landowners in the area for employing mechanical removal of conifers and prescribed fire as a management technique. We believe that this TIP is very likely to help foster a culture of encroachment management.

**Problem Statement:**

Rocky Mountain juniper and Douglas-fir encroachment in the Helmville Valley has contributed to an increase in plant pest pressure. Under the historic disturbance regime and current landowner objectives, conifers are limiting plant productivity, vigor, health, and quality. This concern is widespread in Montana and occurs primarily near the grassland/forest interface. Conifer encroachment has specifically been identified as a priority concern for North Powell Conservation District in the NRCS Long Range Plan.

This landscape-scale ecosystem change has negatively affected native rangeland in several ways:

- The increase of juniper and Douglas-fir affects water quality and quantity. A reduction in water availability can decrease perennial grasses and forbs, leading to an increase in surface water runoff and erosion. Additionally, conifer encroachment on rangeland reduces surface water base flows, resulting in lower soil water availability for forage species important to livestock and wildlife throughout the year.
- Wildlife habitat is affected by conifer encroachment. Many grassland-obligate species avoid areas with trees. Conifer encroachment on historical grassland leads to habitat avoidance as well as increased predation and nest parasitism of birds that have evolved in a more open grassland ecosystem. The Helmville Valley lies within the North American Bird Conservation Initiative's (NABCI) Northern Rockies Terrestrial Bird Conservation Area. NABCI and the Audubon Society have identified the portion of the Blackfoot Valley contained within this TIP area as an "Important Bird Area". This area of intermountain grassland and sagebrush embedded with glacial potholes is an important stronghold for Brewer's sparrows, trumpeter swans, and many other species. Conifer encroachment due to fire suppression was identified as one of the primary threats to this habitat.
- Conifers shade out native perennial grasses and forbs. Encroachment can create favorable conditions for noxious weed invasions. Native ecosystem degradation and the resulting vegetation change due to invaders leads to eventual soil erosion as well as increased fuel loads.
- Conifer encroachment increases potential for severe wildfires. An increase in volatile fuels in turn increases the destructive capabilities of a wildfire. As mentioned above, cheatgrass populations and other weeds can easily invade an ecosystem after wildfire, thus continuing to add to the fuel load and fire risk of an area, affecting the entire valley.
- Conifer encroachment leads to income loss. According to the Deer Lodge Field Office Long Range Plan, rangeland is the dominant agricultural land use in Powell County and most farm income is derived from livestock, predominantly cattle and sheep. A loss of rangeland, which provides valuable forage for livestock, equates to a loss in farm income. Using an average

canopy cover of 28 square feet/tree (U.S. Forest Service) and an estimate of 150 trees per acre, an estimated 10% of each acre of rangeland has succumbed to conifer encroachment on the inventoried areas. Powell County averages 0.28 AUMs on rangeland. According to the 2018 Montana Agricultural Statistics, grazing fees in Montana are \$24.50/AUM. As an example, a livestock producer within the proposed TIP area owns 6,800 acres of rangeland. These native rangeland acres contain approximately 1,300 acres of conifer encroachment. Using this data, a perpetual depletion of rangeland results in an estimated \$900 yearly loss of potential grazing value for this livestock producer. Compounded over time with a continued upward trend of conifer encroachment, these numbers indicate a significant loss of income for the landowner.

### **Goals & Objectives:**

The objective of this TIP is to restore intermountain grassland by addressing the primary resource concern of plant pest pressure. Secondary resource concerns that will improve include: water quantity and quality, wildfire hazard, and wildlife habitat. Implementation of planned practices will restore 6,300 acres of intermountain grassland habitat by removing Rocky Mountain juniper and Douglas-fir in order to reduce widespread conifer encroachment in the Helmville Valley. We believe that implementing this TIP will not only physically restore intermountain grassland but will strengthen the concept and emerging local culture of actively managing conifer encroachment.

#### ***Primary Goal:***

- Decrease plant pest pressure while increasing plant productivity, composition, and health of intermountain grasslands by removing encroaching conifers

The cumulative effects of removing conifer encroachment will also:

- Increase available water quantity and quality / Restore hydrologic function
- Improve terrestrial habitat for wildlife & invertebrates
- Decrease wildfire hazard from biomass accumulation

#### ***Objectives:***

- Remove 6,300 acres of conifer encroachment on private land within the Helmville Valley to decrease plant pest pressure and increase plant productivity, composition, and health of intermountain grasslands
- Treat proposed TIP acres with Brush Management (Practice 314), Woody Residue Treatment (Practice 384), & Forest Stand Improvement (Practice 666) by obligating 3-year contracts during 5 sign-up years.

The proposed TIP will focus on privately-owned rangelands. The desired future outcomes within the contract obligation and implementation time frame include: a reduction in conifer encroachment within the Helmville Valley TIP proposal area, an increase in perennial grasses, forbs, and shrubs for the benefit of livestock and wildlife, and a reduction in fuel load to reduce wildfire risk.

The primary measurable outcome of the Helmville Valley TIP proposal will be the restoration of intermountain grasslands. A second measurable outcome will be the increase in forage production for livestock and wildlife. A third associated outcome will be a reduction in fuel load and decreased fire risk associated with the removal of Rocky Mountain juniper and Douglas-fir from rangeland areas.

**Alternatives:**

**1. No Action**

The “No Action” alternative will allow for the continued advancement of conifer encroachment and an overall decrease in intermountain grassland and sagebrush steppe. Grasses and forbs preferred by livestock and wildlife will decrease over time. This trend will directly contribute to an increase in fuels and an increase in catastrophic wildfire risk. As a result of continuing encroachment, Rocky Mountain juniper and Douglas-fir water-use will increase. Choosing this alternative will save landowners money in the short-term but may reduce long-term agricultural profitability. This alternative does not meet the objectives of the Helmville Valley landowners, North Powell Local Working Group, NPCD, or Blackfoot Challenge.

**2. Treat conifer encroachment using Prescribed Fire (338).**

Anecdotal evidence from area landowners suggests that controlled fire is mainly effective on early successional stage conifers but is much less effective at removing trees beyond the seedling stage. Prescribed burning also brings the inherent risk of a controlled fire escaping the proposed practice area and threatening the surrounding landowners. Additionally, the temporary loss of forage due to burning is unacceptable to many landowners. Prescribed fire also removes sagebrush which is not an objective of this TIP.

**3. Removal of Rocky Mountain juniper and Douglas-fir using Brush Management (314), Woody Residue Treatment (384), Forest Stand Improvement (666), and Herbaceous Weed Treatment (315).**

This alternative will remove the juniper and Douglas-fir through mechanical means. The encroaching conifers will be cut, and the resulting slash will either be scattered, masticated, or piled and burned. New invasions of weeds due to conifer removal activities can be treated using Herbaceous Weed Treatment. Each project area will be evaluated for possible deferment of grazing based on method of conifer removal. Deferred grazing has proven to be a cost-effective method of restoring desirable grass and forb species where sufficient seed source is present on site and overstory tree competition has been removed. This approach has been applied successfully on many thinning and brush management projects throughout the western United States and locally. Although this alternative is a higher cost than Alternative 2, it has lower risk to the landowner and NRCS and higher probability of success on older encroachment. This alternative is acceptable to the most possible program participants and will result in more thoroughly addressing the resource concern.

**Selected Alternative:**

Alternative #3 is the preferred action alternative. Conifer encroachment will be controlled mechanically by applying practices 314, 384 and/or 666 to qualifying areas. Brush Management using chainsaws and

machinery with masticating heads will be the most commonly used practice and will treat areas with up to 25% conifer cover. Forest Stand Improvement, intermediate silvicultural treatment, will be used on areas where non-juniper conifers exceed 25% cover and 13' in height. Woody Residue Treatment will be used where it is necessary to treat the slash to meet specifications and reduce wildfire hazards. Herbaceous Weed Treatment will be used to treat areas where removal of conifers is likely to release a flush of invasive weeds. These methods have been used successfully on many treatment projects in Montana and can be completed quickly and effectively with very little risk to the landowner or to neighboring properties.

### **Partnerships and Other Funding Sources:**

Existing partners include NPCD, U.S. Forest Service, Rocky Mountain Elk Foundation (RMEF), National Wild Turkey Federation, Intermountain West Joint Venture, and Blackfoot Challenge. The United States Forest Service (USFS) is planning a prescribed burn on an estimated 500 acres of conifer encroachment directly adjacent to private land within the proposed TIP area. Many partnering agencies such as RMEF, Mule Deer Foundation (MDF), and the Blackfoot Challenge (BC) are contributing an estimated \$88,000 for the removal of conifers on 340 acres with the goal of improving fish & wildlife habitats, including those for threatened and endangered species. The US Fish & Wildlife Service (USFWS) is planning conifer encroachment removal to improve important migratory bird habitat on 250 acres of the Blackfoot Waterfowl Production Area within the TIP boundary. The Nature Conservancy is also preparing to implement conifer removal on 100 acres of prime elk and mule deer wintering grounds. Established partners and their TIP contributions can be found in Table 1. Potential partners for the proposed action include Bureau of Land Management, Mule Deer Foundation, and Montana Department of Natural Resources and Conservation. The Deer Lodge Field Office will work with private landowners and operators to plan Environmental Quality Incentive Program (EQIP) contracts for financial assistance. We estimate that NRCS financial assistance for the Helmville Valley Conifer Encroachment Targeted Implementation Plan will total \$1,500,000. The annual breakdown of financial assistance requested to implement this project can be found in Table 3.

*Table 1: Established partners and their contributions to the Helmville Conifer Encroachment TIP. All of these projects are planned within or adjacent to the TIP boundary. RMEF, MDF, and BC funding could be used to offset producer costs of implementing EQIP or could be applied as complimentary practices.*

<b>Partner Contributions to Helmville Valley TIP</b>		
<b>Partner Organization or Agency</b>	<b>Acres Treated</b>	<b>Funding Provided</b>
<b>United States Forest Service (USFS)</b>	500	\$10,000
<b>Rocky Mountain Elk Foundation (RMEF)</b>	340	\$25,000
<b>Mule Deer Foundation (MDF)</b>	340	\$10,000
<b>The Nature Conservancy (TNC)</b>	100	\$30,000
<b>Blackfoot Challenge - LSR Grant</b>	340	\$53,000
<b>United States Fish &amp; Wildlife Service</b>	250	\$5,000
<b>Total</b>	<b>1,190</b>	<b>\$133,000</b>

**Implementation:**

Implementation of the Helmville Valley TIP is ready to begin in 2020 with additional contract obligations in 2021, 2022, 2023, & 2024. Approximately 12,000 acres of private land within the treatment area have been identified as potential conifer encroachment problem areas. The Deer Lodge NRCS estimates full implementation of the plan over a five-year period. Four properties of landowners that are ready, willing, and able to begin implementing conservation practices to treat conifer encroachment have already been inventoried and are represented in Table 2. Several meetings have been held with landowners in the Helmville Valley resulting in interest from multiple landowners.

The sequencing of the practice implementation will begin with committed landowners who are ready to begin work immediately and continue with other landowners over the five-year obligation period as they are ready. During this time the Deer Lodge Field Office staff, in coordination with partners, will continue to conduct outreach in the area in order to identify additional interested landowners for TIP sign-up periods in years 2 through 5.

*Table 2: NRCS payment estimates for Year 1 of the Helmville Conifer Encroachment TIP based on 2019 field inventories of 4 producers. We anticipate adding additional acres prior to the 2020 obligation.*

<b>Projected Contract Obligations - Year 1</b>				
<b>Practice</b>	<b>Extent</b>	<b>Type</b>	<b>Payment Rate</b>	<b>Total</b>
<b>Brush Management (314)</b>				
Mechanical, Large Woody Vegetation, High Density	220	ac.	\$308.18	\$67,799.60
Mechanical, Large Woody Vegetation, Light Density	872	ac.	\$104.03	\$90,714.16
<b>Forest Stand Improvement (666)</b>				
Intermediate Silvicultural Treatment	35	ac.	\$418.69	\$14,654.15
<b>Woody Residue Treatment (384)</b>				
Pile and Burn Scenario #6	215	ac.	\$324.74	\$69,819.10
Chipping	40	ac.	\$347.63	\$13,905.20
<b>Herbaceous Weed Treatment (315)</b>				
Chemical, Spot Treatment	10	ac.	\$90.31	\$903.10
Chemical, Ground Application	102	ac.	\$43.48	\$4,434.96
<b>Total</b>				<b>\$262,230.27</b>

Table 3: Requested financial assistance obligation for the Helmville Conifer Encroachment TIP 2020-2024.

TIP Obligation Request		
Year	Acres Contracted	Obligation Requested
2020	1260	\$300,000
2021	1260	\$300,000
2022	1260	\$300,000
2023	1260	\$300,000
2024	1260	\$300,000
<b>Total</b>	<b>6300</b>	<b>\$1,500,000</b>

The Deer Lodge NRCS office is currently staffed by a District Conservationist, 2 Soil Conservationists, and a Soil Conservation Technician. NRCS also contributes funding to a partner position with the Blackfoot Challenge. This staff will be able to accomplish implementing this TIP with very limited assistance from additional NRCS staff. Partner entities have already contributed to outreach activities and will continue to assist. Based on the estimates in Table 4, we anticipate full annual implementation time associated with TIP planning and contracting to require approximately 1008 hours of work. We also expect to require 80 additional hours per year conducting outreach for the TIP with partners and potential participants.

Table 4: Expected NRCS Technical Assistance Hours per 50 contracted acres.

Expected NRCS Technical Assistance Hours per 50 contracted acres			
Task	Hours Travel	Hours Work	Hours/Activity/Contract
I&E	2	3	5
Plan Development		4	4
Contract Development		4	4
Implementation	2	4	6
Certification	5	8	13
Contract Maintenance		8	8
<b>Total</b>	<b>9</b>	<b>31</b>	<b>40</b>

**Progress Evaluation and Assessment:**

The outcome of this project can be measured by the number of acres of conifer encroachment treated. Acres treated is the most effective measure of success because it translates to acres of restored grassland ecosystem. The project will be considered successful if 75% of the 6300 acres targeted receive

treatment within the TIP implementation timeframe. We anticipate 5 obligation years of 3-year contracts. Treated acres will be recorded in NRCS's Conservation Desktop program and will be included in the annual report. Monitoring of grassland species composition will consist of photo-monitoring and vegetative transect at an identified location on each property and will be conducted by Blackfoot Challenge staff prior to or at the time of conifer removal and at minimum 1 growing season post treatment. Planners may choose to add monitoring sites if treatment types or site conditions warrant.

For example, a contract with 314 Brush Management is completed with mastication/ heavy machinery and chain-saw hand felling. The planner may monitor each treatment type. With the goal of conifer removal, monitoring goals should be to demonstrate the treatments have effectively removed trees from the landscape. Monitoring will include a 100' transect. Photos of ground cover will be taken at 10', 30', 50', 70', 90' of the transect. A landscape photo will be taken at 0' facing towards 100', and from 100' facing towards 0'.

Deer Lodge field office staff will compile a yearly report to outline acres treated, monitoring efforts that may be conducted, and any adjustments or changes will be made in the future for implementation. This report will be provided to the Assistant State Conservationist – Field Operations and their review and input will be requested for further streamlining the planning process.

Follow-up treatments by landowners are encouraged in order to maintain long-term favorable rangeland conditions for livestock. Landowners will be strongly encouraged to maintain the restored acres by removing new encroachment through mechanical methods or controlled burning as well as controlling infestations of invasive weeds through biocontrol, chemical or mechanical methods.

### **Helmville Conifer Encroachment TIP Prioritization Tool**

MT300-19-23, Attachment F Montana NRCS Targeted Implementation Plan (TIP) Application Prioritization Tool will be used as the prioritization ranking tool for eligible TIP applications.

### **Helmville Conifer Encroachment TIP Ranking Questions**

#### Local Ranking Questions:

1. Will conifers be removed on ecological sites where the climax community is NOT forested?
2. Are the application acres located on property where a conifer encroachment project is planned on an adjacent property?
3. Will Brush Management (314) be the only contracted practice?
4. Will Brush Management (314) and Woody Residue Treatment (384) be the only contracted practices?

*In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.*

MT300-19-23, Attachment F

## Montana NRCS 2020 Targeted Implementation Plan (TIP) Application Prioritization Tool

**Instructions:** Complete this worksheet for each Fiscal Year 2020 TIP application.

This completed worksheet will be filed with the application and subsequent contract if selected for funding.

<b>Section 1 - Application Information</b>	
Applicant Name:	County:
Application Number:	Field Office:
Evaluator Name:	Date:
Primary Resource Concern:	TIP Name:
<b>Section 2- To be completed for Ranking Prioritization in ProTracts</b>	
<p>1. Has the applicant had an NRCS program contract terminated since January 1, 2017; OR does the applicant have an existing contract that has been determined to be in noncompliance and currently under an active NRCS-CP A-153 (only answer as Yes if the non-compliance was for something within the participant's control)? If yes, identify the following:</p> <p>Date of Termination or date participant signed the NRCS-CPA-153 with an existing deadline to bring the contract back into compliance.</p>	<p><b>Yes-Application is a LOW priority.</b></p> <p><b>No - Continue to question 2.</b></p>
<p>2. Is the proposed conservation treatment within the geographic boundaries of this Targeted Implementation Plan (TIP)?</p>	<p><b>No - Application is a LOW priority and will not be ranked.</b></p> <p><b>Yes - Continue to question 3</b></p>
<p>3. Does the application meet the intent of the Targeted Implementation Plan, (TIP) and is for practices currently offered in the TIP that will treat the identified priority resource concern?</p>	<p><b>Yes-Application is a HIGH priority and will be ranked.</b></p> <p><b>No-Application is a LOW priority and will not be ranked.</b></p>