

**Schedule of Service Items and Specifications**  
**Reds Meadow II - Meadow Conifer Removal Project**

**Table of Contents**

SCHEDULE OF SERVICE ITEMS:..... 2

    Scope of Work..... 2

    Treatment Units:..... 2

    Item 1.0 – Meadow Conifer Removal ..... 3

    Biomass Disposal (All Units)..... 5

        2.0a Burn Piles..... 5

        2.0b Chipping ..... 6

## SCHEDULE OF SERVICE ITEMS:

### Scope of Work

This project involves removal of conifers and hazardous fuels up to 30" DBH encroaching in meadows and aspen. Conifer removal within the meadows will likely occur in two phases: Phase I – conifer removal  $\leq 12"$  DBH and Phase II 12.1 – 30" DBH. Removal of conifers will mechanically cut or hand felled.

**Phase I (conifer removal  $\leq 12"$  DBH):** Trees to be removed will be selected by the contractor with the selection criteria below.

**Phase II (12.1 – 30" DBH):** Trees to be removed will be marked and/or selected by the contractor with the selection criteria below. Trees meeting utilization specifications will be decked at a decking location and slash material will be disposed of following Biomass Disposal specifications.

### Treatment Units:

Unit ID	DBH Limit (inches)	Contract Type	Mechanism	Existing Roads/Campground Infrastructure	Biomass Disposal	Quantity (Acres)
MR-1	12	Optional	Hand	No	Piling/chipping	2
MR-2	30	Optional	Mechanical/ Hand	Yes, partially	Piling/chipping	19
MR-3	30	Optional	Mechanical/ Hand	Yes, partially	Piling/chipping	23
MR-4	30	Optional	Mechanical/ Hand	Yes, partially	Piling/chipping	14
MR-5	30	Optional	Mechanical/ Hand	Yes, partially	Piling/chipping	12
MR-6	30	Optional	Mechanical/ Hand	Yes, partially	Piling/chipping	7
MR-7	30	Optional	Mechanical/ Hand	No	Limited piling, chipping locations. Excess to be removed.	2
MR-8	30	Optional	Mechanical/ Hand	Yes, partially	Limited piling, chipping locations. Excess to be removed.	14
MR-9	30	Optional	Mechanical/ Hand	Yes, partially	Limited piling, chipping locations. Excess to be removed.	22
<b>Total Acres</b>						<b>105</b>

## Item 1.0 – Meadow Conifer Removal

*Treatments under this line item are completed using a combination of hand and mechanized equipment to remove conifers from meadows. Use of mechanical operations within MR units must be approved prior to tree felling operations with special considerations described below. Flexibility is needed in adapting to conditions on the ground.*

**1.1 Tree Selection:** Trees to be cut and removed will be selected by the contractor for all trees <12” DBH. Phase II trees may potentially be designated for removal with blue paint.

**1.2 Tree Falling:** Trees selected for removal shall be directionally felled away from meadows, streams, and wet areas. Leave trees shall be left undamaged by timber operations, except for minor bark scraping, which does not expose the cambium. Trees that are excessively damaged shall be cut.

**1.3 Stump Height:** Trees which are removed are cut to a stump height of less than 4 inches tall (as measured from the uphill side) and no residual live limbs are attached to the stump.

**1.4 Selection Criteria:** All trees less than 30 inches in diameter at breast height (DBH) will be considered for removal based on the following criteria based ecosystem (a – c):

- a. **Meadows:** Meadows will be defined as areas dominated by an understory of herbaceous vegetation.
  - All live conifer trees, less than 30 inches DBH shall be cut and removed meadows and wet areas.
- b. **Aspen Stands:** Aspen stands will be defined as areas supporting multiple mature and/or immature aspen stems.
  - All live conifer trees and dead aspen stems less than 30 inches DBH within 100 feet of an aspen tree will be cut and removed from the aspen stand.
- c. **Upland Areas:** Upland areas will be defined as conifers growing on upland features such as slightly elevated landforms, support vigorous conifer growth, and appear to be persistent on the landscape.
  - Thin all live conifer trees less than 30 inches DBH to a residual spacing of 70 trees per acre (TPA)(25 foot average spacing). Spacing should not be uniform and should vary across the entire unit to create a “natural” aesthetic. Although no five needle pines will be cut, they should be considered in spacing/ total TPA.
  - Leave trees should be vigorously growing with live crown ratios of greater than 40% with no signs of pests or pathogens. Generally, retain healthy dominant and co-dominant trees and remove intermediate and suppressed trees.
- d. **Applies to all (meadows, aspen stands, and upland areas):**
  - Cut all trees within 10 feet of the dripline of residual trees which act as ladder fuels.
  - Cut all trees, regardless of DBH or species actively infested with bark beetle, with 1/3 of the bole or more with pitch tubes. Contractor may leave cut infested trees and leave them on the ground, where removal would cause an unacceptable amount of damage. In these occasions the trees should be bucked so the bole lies within a foot of the surface of the ground, and branch material should be removed and disposed of using one of the methods described in the “Biomass Disposal” section.

- No five needle pines will be cut or damaged during operations, unless they are actively infested with bark beetle or dead.
- e. **DO NOT CUT** any five needle pines: Whitebark pine, western white pine, and limber pine. Preferentially retain species in the following order: Jeffrey pine, Juniper, Red fir, Mountain hemlock, Lodgepole pine, White fir.
- f. Generally, selection of conifers to be cut and removed will be up to the contractor. Under special circumstances some conifers will be designated to be cut and removed using blue or green timber marking paint. Designated trees will have a band painted 360 degrees around the bole of the tree above breast height with at least one butt mark.

**1.5 Standing Dead Tree and Hazard Trees:** All Standing dead less than 12" DBH should be cut and removed.

**1.6 Feathering:** Trees removed from the meadows edge will be feathered into the adjacent upland areas to the extent possible. The goal is not to create an abrupt meadow/upland edge line.

- Conifers 20-30 inch DBH will be evaluated for retention along the meadow/upland edge to facilitate a non-abrupt meadow/upland line. Conifers selected for retention shall be vigorous with no signs of pests or pathogens.

**1.7 Mechanical equipment:** Mechanical tree felling and removal can be utilized in the MR units using the following methods:

- a. Low ground pressure, rubber-tired, equipment with the use of slash mats as ground cover is required within meadow units on dry and saturated soils. This is not required when operating on existing roads, within campground infrastructure, and within upland areas when the soils are dry. Dry soils are defined as soils that are dry to 6-inch depth. Saturated soils are defined as soils that are typically saturated/wet spring through summer, but typically dry towards the end of summer.
- b. No mechanical operations will occur in wet areas, defined as areas with standing or surface water year-round.
- c. Slash mats will be composed of a minimum of 6 inches of compacted slash (12 – 18 inches of uncompact) spread continuously.
- d. No trees greater than 20 inches shall be end-lined or skidded from the meadow. Unless they can be felled so that 50% of the tree bole is outside of the meadows edge.
- e. Operations shall minimize the need to turn equipment when retrieving bole material to reduce disturbance.
- f. If ruts > 2 inches in thickness that extend > 25 feet are created, work will pause and be reassessed by a COR.
- g. All main skid trails within meadows will be flagged and approved prior to project start.

**1.8 Special Circumstances:** To the extent possible all conifers should be removed from the unit. In some circumstances due to wet conditions or terrain, mechanized equipment will not be allowed in certain areas. Under these circumstances use one or a combination of the following methods:

- a. Revisit the unit later in the season when conditions have dried further.
- b. Fully suspend the trees using equipment from an existing road/disturbed area.
- c. Cut and remove trees by hand.

The following two methods require COR notification in writing stating the reason and need to for the use of the following methods prior to utilization:

- d. Girdle and leave trees 20 – 30 inches DBH where mechanical and hand removal is not possible, a maximum of 2-5 trees per acre may be considered to be girdled.
- e. Up to 1% of the unit may be covered by felled conifers where mechanical and hand removal is not possible. In these occasions the trees should be bucked so the bole lies within a foot of the surface of the ground, and branch material should be removed and disposed of using one of the methods described in the “Biomass Disposal” section.

**1.9 Coarse Woody Debris:** Coarse woody debris up to 30 in diameter DBH, that is not excessively decomposed, shall be removed if comprising more than 1% of the meadow area.

**1.10 Activity Generated Material:** All material created during operations, limbs and tops, that does not meet the Utilization Specification, material less than 10 inches in diameter, shall be disposed of using one of the methods described in the “Biomass Disposal” section.

**1.11 Utilization Specification:** Boles of tree measuring 10 inches or greater in diameter on the small end inside the bark and have a length of 10 feet or greater.

---

## Biomass Disposal (All Units)

*The Biomass Disposal section describes specifications for all methods that can be utilized to dispose of all Activity Generated Material not meeting the Utilization Specification. The disposal methods that can be utilized are piling or chipping. It is up to the contractor to choose the best method of biomass disposal based on their capabilities and contract specifications.*

### 2.0a Burn Piles

*Biomass disposal may occur using a burn pile technique. This method will be accomplished by using mechanized equipment and/or hand operated equipment (chainsaws).*

**2.1a Machine/Hand Piles:** Unless approved otherwise by the inspector in writing, maximum pile size shall be 15 feet in diameter by 12 feet in height, and minimum pile size shall be 7 feet in diameter by 5 feet in height at the time of final inspection. In circumstances where there is limited space to meet pile spacing requirements, windrows may be constructed. Windrows are elongated piles which may exceed 12 feet in length in one direction; windrows shall not exceed 12 feet in width and 15 feet in height. All spacing requirements stated below apply to windrows.

- a. All piles shall be constructed by laying limbs, stems, cut boles, and all other slash, in the pile so it is triangular in shape. All material placed in piles shall be bucked to 4-foot lengths to facilitate tight piles. Minimum piece size to be piled would be 3 inches in diameter and 4 feet in length. All piles shall be neat, compact, and sufficiently free of dirt to allow consumption of the piled debris when burned.

**2.1a Landing Piles:** Unless approved otherwise by the inspector in writing, maximum pile size shall be 25 feet in diameter by 20 feet in height, and minimum pile size shall be 15 feet in diameter by 10 feet in height at the time of final inspection. Piles will be constructed so that they are free of dirt and material is tight to facilitate burning. Piles will be lined to a 4-foot horizontal distance to mineral soil to prevent creep when burning.

**2.3a Pile locations:** All activity generated material and coarse woody debris must be added to a pile.

Piles should generally be 20 feet apart.

Piles shall **NOT** be placed:

- Within 5 feet of meadows.
- Closer than 15 feet to boles of residual trees and outside of the dripline of residual trees, for piles less than 8 feet in height.
- Closer than 20 feet to boles of residual trees and outside the dripline of residual trees, for piles greater than 8 feet in height.
- Within 5 feet of any down logs exceeding 12 inches in diameter at the small end unless approved by the inspector.
- Within campgrounds, roads, or within 50 feet of infrastructure (buildings, roads, powerlines, etc.).
- Within 20 feet of trails.
- Within 1.5 times the pile diameter from a five needle pine individual or clump (e.g. a pile that is 15 feet in diameter shall be located at least 22.5 feet from the canopy of a five-needle pine of any size).
- Within 10 feet of unclassified channel bottoms or 25 feet of designated classified streams and meadows as shown on the contract area map and/or designated on the ground.
- Within control areas.

If such locations are not present, the contractor can request to pile outside of the unit in writing to the COR. No piling outside the units is allowed until approved. No cutting or piling will be allowed outside the NEPA boundary.

**2.4a Pile Covering:** All constructed piles shall receive one, 4 foot wide by 4-foot-long sheet of Kraft paper in the top third of the pile. Contractor shall pile additional material (top third) on top of the Kraft paper to prevent paper from moving off the pile by environmental conditions. For windrows, Kraft paper shall be placed in the top third of the pile along the length of the pile to ensure adequate coverage.

## 2.0b Chipping

*Biomass disposal may be accomplished by chipping material dispersing it across the unit and areas adjacent to the unit.*

**2.1b Chipped Material:** Activity generated material and coarse woody debris can be chipped. Minimum piece size to consider for chipping would be 3 inches in diameter and 4 feet in length. Chips should be blown outside of the meadows into, upland, FR or FH units and spread to a depth no greater than 2 inches on average with a max of 4 inches over less than 10 percent of any one acre. When chips are spread within units where five-needle pines are present, chip depth will not exceed 2 inches and they will be spread in a discontinuous manner.

**2.2b Chip Location:** Chips material shall **NOT** be dispersed:

- Into or near classified or unclassified streams or drainages where material has the likely potential to enter streams or lakes.
- Into pre-constructed erosion control features
- Into meadows

- Within 50 feet of any infrastructure (buildings, trails, roads, powerlines, ect.).
- In a continuous manner when around five-needle pines (dispersal shall be discontinuous/leaving some areas without chips).

## Inspections and Acceptance of Work

Work will be accepted for payment based on the results of the Final Inspection. Final Inspection will determine whether the work has been performed satisfactorily according to the specifications. The inspections will be plot based and the plots will be located throughout the units so as to obtain a representative sample of the area. Units will be inspected separately and not combined for the purpose of determining percent of satisfactory work. Inspections are for the purpose of satisfying the Government that the services are acceptable and do not relieve the Contractor of the responsibility for maintaining quality control.

### Performance Measures for Meadow Conifer Removal (Item 1)

1. Cut trees
2. Height of stumps
3. Rehabilitation work

### Performance Measures for Biomass Disposal

1. Piles
2. Chipping/Mastication

As needed, a series of 1/20<sup>th</sup> acre plots (26.3 foot plot radius) per every 5 acres, with a minimum of three plots per unit, will be sampled by a fixed series of plots evenly distributed over the entire treatment area. The plot size will be a fixed radius measured in horizontal distance.

On each plot the designated inspectors will record the plot number, whether the plot is satisfactory or unsatisfactory and the reason if unsatisfactory. Each plot will be examined to record findings on individual items as listed below. To be considered satisfactory these items must meet the following criteria:

Item	Performance Measure	Inspection Metric	Pass	Fail
Meadow Conifer Removal	Cut Trees	Trees cut to specification	<1 tree per plot left uncut	≥1 tree per plot left uncut without justification
	Height of Stumps	Stumps less than 4 inches tall on the uphill side	≤1 trees per plot	>1 trees per plot fail
	Rehabilitation Work	Rehab work is to specification	Where mechanical equipment was used rehab work is to specification	Where mechanical equipment was used rehab work

				is NOT o specification
Biomass Disposal	Piles	Activity generated material has been treated	≥9/10 piles meet specifications and <1 piece of material per plot not treated	<9/10 piles meet specifications and ≥1 piece of material per plot not treated
	Chipping/ Mastication	Activity generated material has been treated	Depths exceed specified depths on ≤10% of the chipped area	Depths exceed specified depths on >10% of the chipped area

Acceptance

Work on this Agreement will be deemed acceptable when a score of 90 percent or more is achieved. For a score of 80 percent or more but less than 90 percent, 2 percent of the unit price pay will be deducted for that unit for each percentage point below 90%. If the inspection score is less than 80 percent then there is no pay. The unit may be reworked ONCE and then re-inspected. This re-inspection score will be the final result for payment on that unit, (see re-inspection after rework below).

Government Inspections

Government inspections are for the purpose of satisfying the Government that the services are acceptable and do not relieve the Partner of the responsibility for maintaining quality control.

The Agreement Officer's Representative or designated inspector will conduct all inspections. The Partner (or designated representative) is encouraged to be present to observe inspections. Summary results will be made available on request.

*Compliance Inspections.* Visual compliance inspections will be made on a periodic basis. Such inspections are not final and do not constitute acceptance by the Government.

*Final Inspections.* Final (formal) inspections for payment will be made on completed sub-items only. The Partner shall request final inspections in writing and give the Forest Service at least two working days advanced notice. Inspection forms will be provided to the Forest Service at the time of final inspection request. Inspections will be completed within ten working days after the notice is received. If the work is not ready for inspection at the time specified by the Partner, the cost associated with the inspection attempt may be charged to the Partner.

Disputed Inspection

The Contractor may request re-inspection without rework if the results are unacceptable. Re-inspection must be requested in writing within 48 hours after receiving written notice of the inspection results. Re-inspection will be accomplished within five working days after receipt of the Contractor's written request.

The same sampling and inspection procedures will be used, but new samples will be taken. The inspection pattern will be shifted so that new samples will not overlap previously inspected samples. Results will be rounded to the nearest whole percent.



If re-inspection results are within five percentage points of the first inspection, the original inspection result will be used in determining acceptability and payment. If re-inspection results are greater than five percentage points above or below the first inspection, the re-inspection results will be used.

If the re-inspection results are within five percentage points of the first inspection, the Contractor shall pay the actual costs of the re-inspection.

#### Re-inspection after Rework

Where rework after a failed inspection may improve the inspection results, the Contractor may rework the area and request (in writing) a second inspection. The Whitebark Institute will charge to the Contractor the cost of this additional inspection. Re-inspection will be accomplished within five working days after the notice is received. The results of the second inspection will be final, and no further rework will be permitted. Areas not ready for re-inspection at the time specified by the Contractor will not be re-inspected, and the results of the first inspection will be final.