APPENDIX A

TECHNICAL SPECIFICATIONS FOR SERVICE WORK ITEMS

SECTION I – DESCRIPTION OF WORK:

The objectives of this project are to increase forest resiliency and resistance to bark beetle epidemic, increase age class diversity, promote recovery of forest vegetation, reduce the risk of high severity wildfires, and provide wood products for both commercial and non-commercial uses by accomplishing the following:

1. Cut and remove ponderosa pine live saw timber 9.0” DBH – 21.9” DBH
2. Cut, skid, and deck ponderosa pine dead sawtimber and live/dead non-sawtimber. 5.0” DBH –21.9” DBH
3. Decommission user created forest roads.
4. Place boulders for vehicle use restriction.

SECTION II – WORK ITEMS

Mandatory Item 1: Cut and Remove Included Timber:

Units 1, 2, 5, 6 & 10 (142.7 Acres)

Cutting Unit	Acres	CCF
1	57.3	500.9
2	15.2	132.9
5	40.1	350.6
6	10.4	90.9
10	19.7	172.2
Total	**142.7**	**1248**

Cut and remove from Contract Area sawtimber trees which meet the minimum tree specifications as identified in Appendix B. All Appendix B and C clauses are applicable to this item.

Mandatory Item 2: Cut Skid and Deck non-saw and dead sawtimber :

Units 1, 2 & 6 (82.9 Acres)

Cutting Unit	Acres
1	57.3
2	15.2
6	10.4
Total	**82.9**

Cut:

1. Fell all dead ponderosa pine, 5.0” DBH – 21.9” DBH (25.9” DRC) not marked with orange paint.
   a. Note: 25.0” DRC equates to 21.0” DBH, however, designation for cutting is based on DBH.
2. Fell all designated live non-saw trees that are between 5.0” – 8.9” DBH according to Appendix B C2.355#, C2.356#.
3. Maximum stump height is 12”.
4. Cut trees may be processed at the stump and/or landings. All cut trees meeting utilization standards identified in appendix B shall be limbed of branches as near to their bole as possible and have their top severed from according to Appendix B, A.2 utilization standards.
5. All slash created by contractor shall be piled per C6.7#

Skid/Deck:

1. Applies to all Contractor-felled trees that are live/dead non-saw 5.0”-8.9” DBH and dead sawtimber 9.0” DBH – 19.9” DBH that meet utilization standards as identified in Appendix B.
2. Skid logs to approved landing areas as designated by COR. The COR will designate the actual footprint of the decking area on the ground. Additional trees may need to be cut to accommodate decks and will be designated by the Forest Service and agreed to by representative.
3. No decking in road prisms.
4. No skidding of logs across Forest System Road without COR approval.
5. Decks need to be compact, neat, and orderly with minimal air space.
6. All butt ends of the log shall face the same direction.
7. The minimum height of a deck is 5’.
8. Larger and fewer decks are preferred.
9. Decks should be created along system roads.
10. If there is less than 10 ccf left at the landing, remaining logs should be lopped and scattered or piled amongst contract-generated slash piles. The temp road accessing them shall be closed to the above specifications found C5.34# - Obliteration of Temporary Roads, Skid Trails and Landings.

Mandatory Item 3: Cut, Skid and Pile Non-saw

Unit 5 & 10 (59.8 Acres)

Cutting Unit	Acres
5	40.1
10	19.7
Total	**59.8**

1. Leave all dead standing sawtimber and non-sawtimber uncut.
2. Fell all designated live non-saw trees that are between 5.0” – 8.9” DBH according to Appendix B C2.355#, C2.356#.
3. Maximum stump height is 12”.
4. Non-saw shall be piled with slash material to reduce number of individual piles and to help facilitate burning . All slash created by contractor shall be piled per C6.7#.

Optional Item 4: Cut and Remove Included Timber:

Units 3, 4, 7, 8 & 9 (391.8 Acres)

Cutting Unit	Acres	Volume (ccf)
3	97.3	850.6
4	72.3	632.1
7	52.7	460.7
8	81.7	714.3
9	87.8	767.6
SUM	**391.8**	**3425**

Cut and remove from Contract Area sawtimber trees which meet the minimum tree specifications as identified in Appendix B. All Appendix B and C clauses are applicable to this item.

Optional Item 5: Cut, Skid and Deck non-saw and dead sawtimber:

Units 7 & 9 (140.5 Acres)

Cutting Unit	Estimated Acres
7	52.7
9	87.8
Total	**140.5**

Cut:

5. Fell all dead ponderosa pine, 5.0” DBH – 21.9” DBH (25.9” DRC) not marked with orange paint.
    a.Note: 25.0” DRC equates to 21.0” DBH, however, designation for cutting is based on DBH.
6. Fell all designated live non-saw trees that are between 5.0” – 8.9” DBH according to Appendix B C2.355#, C2.356#.
7. Maximum stump height is 12”.
8. Cut trees may be processed at the stump and/or landings. All cut trees meeting utilization standards identified in appendix B shall be limbed of branches as near to their bole as possible and have their top severed from according to Appendix B, A.2 utilization standards.
9. All slash created by contractor shall be piled per C6.7#

Skid/Deck:

1. Applies to all Contractor-felled trees that are live/dead non-saw 5.0”-8.9” DBH and dead sawtimber 9.0” DBH – 19.9” DBH that meet utilization standards as identified in Appendix B.
2. Skid logs to approved landing areas as designated by COR. The COR will designate the actual footprint of the decking area on the ground. Additional trees may need to be cut to accommodate decks and will be designated by the Forest Service and agreed to by representative.
3. No decking in road prisms.
4. No skidding of logs across Forest System Road without COR approval.
5. Decks need to be compact, neat, and orderly with minimal air space.
6. All butt ends of the log shall face the same direction.
7. The minimum height of a deck is 5’.
8. Larger and fewer decks are preferred.
9. Decks should be created along system roads.
10. If there is less than 10 ccf left at the landing, remaining logs should be lopped and scattered or piled amongst contract-generated slash piles. The temp road accessing them shall be closed to the above specifications found C5.34# - Obliteration of Temporary Roads, Skid Trails and Landings.

Optional Item 6: Cut, Skid and Pile Non-sawtimber

Units 3, 4, 8 and (251.3 Acres)

Cutting Unit	Estimated Acres
3	97.3
4	72.3
8	81.7
Total	**251.3**

1. Leave any dead standing sawtimber and non-sawtimber uncut.
    a. There is very little volume of this kind.
2. Fell all designated live non-saw trees that are between 5.0” – 8.9” DBH according to Appendix B C2.355#, C2.356#.
3. Maximum stump height is 12”.
4. Non-saw shall be piled with slash material to reduce number of individual piles and to help facilitate burning . All slash created by contractor shall be piled per C6.7#.

Optional Items 7a, 7b, 8a, 8b, 9a, 9b, and 10: Road Decommissioning and Boulder Placement

Road Network	Description	Units	Quantity

Shush	Road Decommissioning	Feet	9,909
Shush	Boulder Placement	Each	60
Powerline	Road Decommissioning	Feet	250
Powerline	Boulder Placement	Each	30
Little Bean	Road Decommissioning	Feet	250
Little Bean	Boulder Placement	Each	30
Temp Road C	Boulder Placement	Each	15

Boulder Placement Specifications for Items 7b, 8b, 9b, 10

1. Delivery and placement of erosion prevention boulders from the Ormiston Pit to the location indicated on the Stewardship Work Maps.
2. Boulders shall be a minimum of 28" on 3 dimensions (Unless otherwise approved by COR).
3. Boulders shall be placed along staked/flagged line 36" apart to close access to decommissioned temporary roads
4. Boulders are stockpiled at the USFS Ormiston pit located on FSR 521 and indicated on the Stewardship Work Maps. Boulders are piled and mixed with smaller rocks not meeting specification. Prior to loading sorting may be needed to find boulders that meet specifications described above. Contractor will furnish all equipment needed for the service including (but not limited to) sorting, loading, delivery and offloading and placement/install

7a Shush Road Decommissioning (9,909 feet) and 7b Boulder Placement

1. 5 waterbars shall be constructed at designated locations (refer to Stewardship Work map, final on the ground location will be flagged by contract representative)
2. Light scarification, 2"-4" deep, of soil in road prism to encourage seed contact with bare mineral soil, remove berms that have potential to impede water flow off of trail (such as turns in road or flat areas below inclines)
3. Seed road prism areas according to contract mix described in provision C6.601# - Erosion Control Seeding
4. After seeding, cut oak brush within 5 feet and gather down woody debris within 10 feet from areas adjacent to road prism and spread across the entire road prism in at least a single layer.
5. Boulder Placement – refer to road decommissioning/ boulder map for locations (final footprint will be flagged by contract representative)
   (a) Location A. place 7 boulders 36" apart
   (b) Location B. make a centralized pile of 53 boulders
6. Decommissioning of road network should not decommission any portion which crosses the Shush Recreational Trail. At intersections of road and trail, road should be brushed to refuse access from trail.

8a Power Line Road Decommissioning (250 feet) and 9a Little Bean Network Road Decommissioning (250 feet)

1. Light scarification, 2"-4" deep, of soil in road prism to encourage seed contact with bare mineral soil, remove berms that have potential to impede water flow off of trail (such as turns in road or flat areas below inclines)
2. Seed road prism areas according to contract mix described in provision C6.601# - Erosion Control Seeding
3. After seeding, cut oak brush or gather down woody debris from areas adjacent to road prism and spread across the entire road prism in at least a single layer.

8b Power Line Road Boulder Placement and 9b Little Bean Boulder Placement

4. Boulder Placement – refer to road decommissioning/ boulder map for exact locations

(a) Place 4 boulders 36" apart, blocking road prism, then place 26 boulders starting from the existing boulder line and continuing to the north

10, Boulder Placement of Temporary Road C (Unit3)

1. Boulder Placement – refer to Contract Area Map for exact locations
   (a) Place 15 boulders 36" apart, blocking access to Temporary Road C.

SECTION III – CONTROL OF WORK

The Contractor agrees to conduct its operations under this contract and other related business activities in compliance with Federal, State, and local statutes, standards, orders, permits and other regulations.

The Contractor shall meet all State and local environmental quality laws applicable to National Forest system lands.

Work may be done any time during the term of the contract, except under the following conditions:

(1) When conditions are such that operations shall be restricted or ceased due to increased fire risk.

(2) If new nests are discovered during operations of this contract, work will be suspended in the immediate vicinity of the site until survey is completed by the Forest Wildlife Biologist. Areas excluded from treatment shall be deleted from the contract.

(3) When soil moisture conditions create excessive risk of damage to the soil,

(4) When snow depth creates a situation where requirements cannot be met and/or work cannot be inspected, as determined by the COR.

(5) The government reserves the right to prioritize the order in which Units are treated. Unit 2 should be treated first.

(6) If any cultural or archeological sites are discovered during operations of this contract, work will be suspended in the immediate vicinity of the site until a reconnaissance survey is completed by the Forest Archeologist. Areas excluded from treatment shall be deleted from the contract.

SECTION IV – INSPECTION AND ACCEPTANCE

For All Work Items:
At any point during the project, the Contractor and/or Project Manager may request (documented through email, text, or hand-written request) an in the field consultation with the Forest Service to inspect work progress, review contract specifications, or clarify issues. The Forest Service shall respond to Contractor's request within 5 working days, excluding weekends and federal holidays.

GOVERNMENT QUALITY ASSURANCE SURVEILLANCE PLAN

Government Inspection Procedures - The COR, or a designated inspector (GTM), will make periodic inspections while work is in progress, usually daily at first, as needed to assure work is proceeding satisfactorily. The Contractor shall notify the COR when units are started, when problems are encountered and when contract work needs government oversight.

1. Each unit will be inspected as a separate unit. Unit will not be averaged with other units for acceptance or payment.

2. When units are completed and ready for government inspection, Contractor's designated Project manager shall request unit inspection in writing, prior to moving out of the general area.

3. The COR, or designated inspector, will determine compliance with contract specifications through informal visual inspections. In the event visual inspection indicates work to be in non-compliance with specifications, prompt corrective action and/or rework shall be required.

Government Inspection Procedures – Formal (Plots) - Items 1,2, 3, 4, 5 and 6

1. In the event visual inspection indicates work and / or rework to be in non-compliance with contract specifications, a series of verification plots shall be installed by the Government to determine compliance with specifications and percent of satisfactory work for treatment of each unit not meeting specification as observed with visual inspection.

2. Government verification plots will consist of a series of fixed area plots and variable radius plots along transects to record whether density, basal area, best tree selection, and other requirements are being met and to what extent.

3. Plots and grid will be distributed so that a representative sample is obtained.

4. The COR or designated inspector will mark the center of each plot on the ground using flagging, stakes, or pin flags. Additional flagging will be hung near the plot center so that it may be seen from a distance. The inspector will include the plot number, their initials and date on the flagging.

5. Plots will be numbered to correlate with the inspection form and transects on a unit map.

6. The minimum number of verification plots, per treatment unit, shall be as follows:

Minimum No. of Plots
1 plot per 40 acres At least 4 plots per Cutting Unit

7. Determination of acceptability of the work performed will be based on Government verification inspections and will be considered conclusive.

8. Plots will determine as pass/fail according to Appendix B, C6.36# - Acceptance of Work.

<u>Unsatisfactory Cutting</u>

1. If the work quality falls below 85 percent, the COR will immediately notify the Contractor, in writing, and order him to improve the quality of subsequent tree cutting. If the quality of subsequent tree cutting is not raised above the 85 percent minimum acceptable standard within 24 business hours after receipt of such written notice, the Contractor's right to proceed may be terminated and the contract considered in default.

2. When the work quality falls below 90 percent <u>as a result of C6.36# - Acceptance of Work</u> criteria, the Government may elect to do one of the following:

    a. Order rework to be performed and withhold payment until excess trees are cut and the results of a post-rework Government inspection show work quality to be at least 85 percent or more. No rework shall be performed unless ordered or authorized by the COR.

    b. Order that no rework be performed and payment will either be made at a reduced rate, or not at all, as determined from the Thinning Inspection Report.

3. Repeated failure to produce work quality at or above the 85 percent minimum acceptable standard will be considered reason for contract termination and default action.

Government Inspection Procedures – Formal (Plots) - Items 7a, 7b, 8a, 8b, 9a, 9b, and 10

1. Visual inspections will be used to verify compliance with contract specifications.
    a. Boulder Placement: Correct placement/delivery of boulders
    b. Road Decommissioning: Roads are ripped and seeded to adequate depth and seeding rate.
2. Road work requires 100% AQ Levels.

Reinspection Upon Contractor Request

1. If Government inspection results are unacceptable to the Contractor, a reinspection may be requested, in writing, within 5 business days after receipt of notice of said inspection results. The same inspection procedure will be used; however, the inspection pattern will be shifted so that new inspection plots will not overlap previously inspected plots.
2. If reinspection results – rounded up to the nearest whole percent – indicate a variance of more than 5 percent from the first inspection, the results of the second inspection will be used to calculate work quality and payment, and the Government will bear the cost of reinspection.
3. If reinspection results – rounded up to the nearest whole percent – are within 5 percent of the first inspection, plots from the initial inspection and the reinspection will be combined and used to calculate work quality and payment, and the Contractor shall bear the cost of reinspection.

Government Inspection Procedures – All Items

Table 1 – Minimum Acceptable Quality Levels (AQL) of Work

Item #	Description	Schedule	Unit	Min. AQL
1	Cut and remove included timber Unit(s) 1, 2, 5, 6, 10	Mandatory	Acre	90%
2	Cut skid and deck non-saw and dead sawtimber Unit(s) 1, 2, 6	Mandatory	Acre	90%
3	Cut skid and pile non-sawtimber Unit(s) 5, 10	Optional	Acre	90%
4	Cut and remove included timber Unit(s) 3, 4, 7, 8, 9	Optional	Acre	90%
5	Cut skid and deck non-saw and dead sawtimber Unit(s) 7, 9	Optional	Acre	90%
6	Cut skid and pile non-sawtimber Unit(s) 3, 4, 8	Optional	Acre	90%
7a	Shush network Road decommissioning	Optional	Ft	100%
7b	Shush network Boulder Placement	Optional	Each	100%
7a	Powerline network Road decommissioning	Optional	Ft	100%
8b	Powerline network	Optional	Each	100%

	Boulder Placement			
9a	Little Bean network Road decommissioning	Optional	Ft	100%
9b	Little Bean network Boulder Placement	Optional	Each	100%
10	Temp Road C Riprap Rock Placement	Optional	Each	100%

SECTION V – PAYMENT METHODS

Method of Measurement for Acreages

Acreages and miles were determined by using Global Positioning Systems (GPS) or digitized using GIS mapping. Some unit boundaries are flagged, the majority of boundaries are virtual.

Discernable Boundaries are boundary locations that are readily identifiable features on the ground in locations shown on the Contract Area Map. A Geo-Fence is a location on the ground corresponding to the boundary location shown on a mobile mapping device using a Global Positioning System (GPS) Receiver using a digital vector file/shapefile. The digital vector file/shapefile will be provided as an attachment to the Contractor by the Forest Service. A digital list of the coordinates can be provided upon request.

Contractor is responsible for obtaining a GPS receiver(s) that is capable of determining the location of the geo-fence boundary within the contract tolerance. Allowable contract tolerance is 40 feet.

Forest Service inspection of treatment boundaries shall be conducted to determine treatments are within the allowable contract tolerance using the digital vector file/shapefile referenced above using a GPS Receiver with a minimum, tested accuracy in a Light- Medium canopy of 20 feet.

National Technology Development Program GPS Receiver accuracy reports by GPS manufacturer and model are available at: https://www.fs.usda.gov/database/gps/mtdcrept/accuracy/index.htm. Forest Service determination of boundary location will be final.

In case of a major disruption in GPS service, or lack of GPS coverage on the Contract Area beyond the control of the Contractor, as determined by the Contracting Officer, extension of time may be granted by Contracting Officer when requested in writing by Contractor in accordance with 52.212-4 (f) Excusable Delays. To resolve major disruption of GPS service, or lack of GPS coverage on the Contract Area, the Forest Service may elect to Mark Geo-Fence boundaries on the ground, in which case the Forest Service's determination of boundary location will be final.

The acreage for each work item will be rounded to the nearest 10th decimal and miles will be rounded to the nearest hundredth of a mile. Acreage and milage is final unless:

a. The contract is modified or,
b. The Government makes a determination to remeasure or,
c. The Contractor exercises his/her option under the following Remeasurement provisions:

Remeasurement

1. The Contractor may request, in writing, remeasurement of any units under this contract if he/she feels that acreage or milage stated on the project maps is incorrect. The remeasurement must be within the existing perimeter of the respective unit or existing centerline of the road. No variance of the unit perimeters or road as identified on the maps for this contract will be allowed. All requests for remeasurement must be made prior to payment for each completed unit. Remeasurement will be performed by the Government.
2. If remeasurement indicates that a variance of ten percent or less exists on units of 1 to 5 acres, five percent or less exists on units of more than five but less than 20 acres, or if three percent or less exists

on units of 20 acres or larger, the Contractor shall pay for the actual costs of the remeasurement. Under this condition, payment will be made on the acreage stated on the project maps. If the remeasurement indicates the actual acreage varies by more than the above factors from that stated on the project maps, the payment will be made on the remeasured acreage and the Forest Service will pay for the cost of the remeasurement.

Acceptance and Payment – Items 1, 2 , 3 , 4, 5, 6, Cutting and Removing Timber, Piling, Cut Skid and Decking

1. If informal visual inspection indicates acceptable work quality, the Contractor will be paid 100 percent of their bid rate.
2. In the event that formal inspections are used, the rate of payment to the Contractor will be calculated as follows:
   (a) For work quality of 90 percent or higher, the Contractor will be paid 100 percent of their bid rate.
   (b) For work quality from 80 to 89 percent, the Contractor will be paid the total multiplied by the bid rate.
   (c) For work quality 79 percent and less, no payment made to the Contractor.
   (d) If, after rework, the percentage of satisfactory work is between 80% and 89%, payment will be made by the actual percentage. If the percentage is less than 80%, the work is unacceptable, and no payment will be made.

Acceptance and Payment – Item 7a, 7b, 8a, 8b, 9a, 9b, 10 Road Decommissioning and Boulder Placement

1. Full payment will be made when visual and/or measurement inspection indicates specifications have been met and the roads are sufficiently closed and blocked to vehicle traffic
2. Only one rework opportunity will be allowed for this item.

SECTION VI – DEFINITIONS

ACCEPTABLE QUALITY LEVEL (AQL): Acceptance of work will be based on compliance with all specifications corresponding to the appropriate task(s). A minimum AQL is required for all service work – hand or mechanical. The minimum AQL will receive a satisfactory performance rating.

ADVANCED REGENERATION: Young, healthy, dwarf mistletoe-free conifers, less than 5.0 inches in diameter, free of defect.

ASPEN CLONE: A collection of vigorous aspen trees sharing the same root system.

BOLE SPACING: The horizontal distance in feet from the edge of one leave tree bole to another leave tree bole, measured from the outside bark of each tree.

CIRCULAR PLOT: A sample plot within a thinning unit that is used to determine the number of desirable trees and other contract specifications.

CLUMPS: Clumps are collections of two - eleven trees growing close in proximity. Trees within clumps directly affect each other's growth and form, and their crowns are interlocked. The boles of trees within clumps either touch or grow very near to each other (within 8 ft.).

CROWN RATIO: The ratio of live crown length (tip of leader to base of the crown) to total tree length/height.

CROWN SPACING: The horizontal distance in feet between the dripline of a live crown to another live crown.

CROWN RATIO: The ratio of live crown length (tip of leader to base of the crown) to total tree length/height.

CROWN SPACING: The horizontal distance in feet between the dripline of a live crown to another live crown.

CUT TREES: Trees that do not possess the characteristics of desirable leave trees and are required to be cut. As described by the contract or otherwise marked to be cut.

CUTTING UNIT: See Treatment Unit definition

DAMAGED TREES: Trees damaged beyond recovery. A tree that is larger than 2 feet in height, and has the top knocked out, is leaning more than 10 degrees, has less than one half of its original limbs, or has approximately 50% of bark removed from the circumference of the bole.

DBH: Diameter at breast height, measured at a point of 4.5 feet above the ground level on the uphill side of the tree.

DECKING: Stockpiling of trees in a designated area.

DEAD/DYING TREES: Trees with the crown foliage changing from green to red, yellow, or needleless. Any tree that has pitch tubes indicating Pine Beetle infestation.

DESIGNATION BY PERSCRIPTION (DXP): A cutting designation where a prescription is used to determine which trees will be left and which will be cut.

DIB: Diameter inside bark.

DRC: Diameter at root collar measured 6 inches above the ground level on the uphill side of the tree.

HANG-UP TREE: Any cut tree suspended above ground level.

INDIVIDUALS: Individual trees are open grown and receive full sunlight. They are not directly impacted by other trees. The post-harvest stand should contain individual trees of varying size/age classes.

INTERSPACE: The open area found in between clumps and individual trees. Interspace is smaller than openings. Patches of interspace are irregular in shape but are often 10-50 feet in size.

LEAVE TREE: Trees that possess desirable characteristics and that serve to create the basis for designated spacing requirements or are otherwise designated to be left.

NON-SAWTIMBER TREE: For all conifer species, minimum diameter of 5 inches DBH to maximum diameter 8.9 inches DBH.

OPENINGS: Areas up to two acres in size (though they are usually smaller) that are free of trees (excepting advanced generation). Within treated stands, openings may be created when areas of dead, mistletoe-infected, or beetle-infested trees are cleared. Openings can also be created when regeneration is present. The post-harvest stand should contain openings, but they should not actively be created other than by clearing around regeneration, removal of dead, mistletoe-infected, or beetle-infested trees.

PAYMENT UNIT: See Treatment Unit.

PILING: Gathering and stacking of downed wood and activity slash by hand or mechanical methods into piles constructed and located as indicated by technical specification and project maps.

PROGRESSION OF WORK: Work conducted in a progressive, workmanlike and orderly manner by the Contractor.

SAWTIMBER TREE: Included timber meeting sawlog size specifications as defined in Appendix B, Division A.2.

SLASH: Woody material existing or created that has accumulated on the forest floor. Woody material includes logs, pieces of logs, tops, and branches.

UNIT: See Treatment Unit.

TEMPORARY ROADS: Non-permanent roads that are constructed by Contractor for the purpose of treatment unit access.

TREATMENT UNIT: An individual area on the ground in which activities will be performed and which may appear as a separate pay item in the Schedule of Items.

UNSATISFACTORY WORK: If work quality falls below the AQL, the COR will issue a work order or notice of noncompliance to the Contractor in writing. Untreated or unsatisfactory treated areas shall be reworked to obtain satisfactory work quality.

VIRTUAL BOUNDARY: A unit boundary that is shown on the map but is not demarcated on the ground. The contractor must use mapping applications in order to locate these boundaries in the unit.

WHOLE TREE YARDING: Whole tree logging includes cutting tree and removing the entire tree, including tops and branches, to the landing.

WILDLIFE TREE: Standing tree marked to be reserved as a wildlife tree. Used by birds and small mammals for shelter, nesting, perching, etc.

Exhibit 1 - Dwarf Mistletoe Rating System

Dwarf mistletoe management should only be considered after an analysis of the impacts that the parasite has in the trees, stands, and ecosystems they inhabit. One tool has been used for over 25-years to standardize the quantity of dwarf mistletoe parasitism within a stand. The Hawksworth 6-class dwarf mistletoe rating system (DMR) provides a quantitative reference scale for determining the relative population status of a dwarf mistletoe infestation within a stand and its potential for spread and intensification.

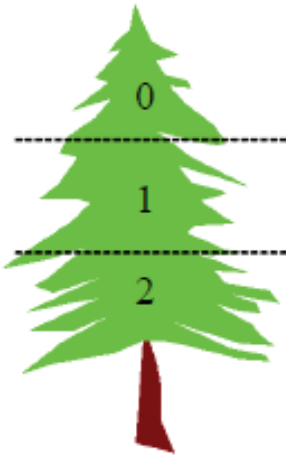
The 6-class dwarf mistletoe rating system (DMR)
(Hawksworth 1977)

Instructions

STEP 1. Divide live crown into thirds.

STEP 2. Rate each third separately. Each third should be given a rating of 0, 1 or 2 as described below.
(0) No visible infections.
(1) Light infection (1/2 or less of total number of branches in the third infected).
(2) Heavy infection (more than ½ of total number of branches in the third infected).

STEP 3. Finally, add ratings of thirds to obtain rating for total tree.



Example

If this third has no visible infections, it's rating is (0)

If this third is lightly infected, it's rating is (1)

If this third is heavily infected, it's rating is (2)

The tree in this example will receive A rating of 0+1+2=3.

Hoffman, James T. "Management Guide for Dwarf Mistletoe". Forest Health Protection and State Forestry Organizations, May 2004. Web.