# Timber Sale Appraisal
# Little Salander Headwaters

## Sale CS-341-2016-10-

**District: Coos** **Date: June 01, 2015**

## Cost Summary

| | Conifer | Hardwood | Total |
|---|---|---|---|
| **Gross Timber Sale Value** | $469,859.43 | $6,757.29 | $476,616.72 |
| | | **Project Work:** | ($50,855.00) |
| | | **Advertised Value:** | $425,761.72 |

# Timber Sale Appraisal
# Little Salander Headwaters

## Sale CS-341-2016-10-

**District: Coos** **Date: June 01, 2015**

## Timber Description

**Location:** Portions of Section 3, T23S, R10W, W.M., Douglas County, Oregon.

**Stand Stocking:** 60%

| Specie Name | AvgDBH | Amortization (%) | Recovery (%) |
|---|---|---|---|
| Douglas - Fir | 17 | 0 | 95 |
| Western Hemlock / Fir | 18 | 0 | 95 |
| Alder (Red) | 12 | 0 | 90 |

| Volume by Grade | 2S | 3S | 4S | 2S 12"+ | 3S 10" - 11" | 6" - 7" | Total |
|---|---|---|---|---|---|---|---|
| **Douglas - Fir** | 654 | 465 | 138 | 0 | 0 | 0 | 1,257 |
| **Western Hemlock / Fir** | 202 | 392 | 81 | 0 | 0 | 0 | 675 |
| **Alder (Red)** | 0 | 0 | 0 | 6 | 11 | 12 | 29 |
| **Total** | 856 | 857 | 219 | 6 | 11 | 12 | 1,961 |

**Comments:** Pond Values Used: 1st Quarter Calender Year 2015.

66 acres of regeneration harvest containing approximately 1,961 MBF of 37-53 year old third growth Douglas-fir and western hemlock.

Western redcedar and Other Cedars Stumpage Price = Pond Value minus Logging Cost:
$468.58/MBF = $775/MBF - $306.42/MBF

SCALING COST ALLOWANCE = $5.00/MBF

FUEL COST ALLOWANCE = $3.00/Gallon

HAULING COST ALLOWANCE:
Hauling costs equivalent to $780 daily truck cost.

Other Costs (with Profit & Risk to be added):
YARDING AND LOADING:
Ground Based Equipment Wash: $65/hr x 6 hours = $390
Brand and Paint Logs: $1/MBF x 1,961 MBF = $1,961
Cull Sorting/Slash Piling on Landings: $125/landing x 6 landings = $750
Rig Tail/Lift Trees: $150/tree x 4 trees = $600
Artificial Guy Anchors(dozer, skidder): $500/anchor x 1 anchor = $500
Cover Landing Slash Piles: $50/pile x 8 piles = $400
TOTAL Other Costs (with Profit & Risk to be added) = $4,601

Other Costs (No Profit & Risk added):
None.

# Timber Sale Appraisal
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## Sale CS-341-2016-10-

**District: Coos** **Date: June 01, 2015**

## Logging Conditions

**Combination#: 1**

| | |
|---|---|
| Douglas - Fir | 69.00% |
| Western Hemlock / Fir | 69.00% |
| Alder (Red) | 69.00% |

**Logging System:** Cable: Medium Tower >40 - <70 **Process:** Stroke Delimber

**yarding distance:** Medium (800 ft) **downhill yarding:** No

**tree size:** Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

**loads / day:** 10 **bd. ft / load:** 3800

**cost / mbf:** $157.90

**machines:** Log Loader (A)
Stroke Delimber (A)
Tower Yarder (Medium)

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**Combination#: 2**

| | |
|---|---|
| Douglas - Fir | 31.00% |
| Western Hemlock / Fir | 31.00% |
| Alder (Red) | 31.00% |

**Logging System:** Shovel **Process:** Stroke Delimber

**yarding distance:** Short (400 ft) **downhill yarding:** No

**tree size:** Mature Private Forest / Regen Cut (250 Bft/tree), 6-11 logs/MBF

**loads / day:** 12 **bd. ft / load:** 3800

**cost / mbf:** $69.56

**machines:** Stroke Delimber (B)

# Timber Sale Appraisal
# Little Salander Headwaters

## Sale CS-341-2016-10-

**District: Coos** **Date: June 01, 2015**

## Logging Costs

| | | | |
|---|---|---|---|
| **Operating Seasons:** | 1.00 | **Profit Risk:** | 20% |
| **Project Costs:** | $50,855.00 | **Other Costs (P/R):** | $4,601.00 |
| **Slash Disposal:** | $0.00 | **Other Costs:** | $0.00 |

**Miles of Road**

**Road Maintenance:** $0.00

| Dirt | Rock (Contractor) | Rock (State) | Paved |
|---|---|---|---|
| 2.0 | 1.0 | 0.0 | 0.0 |

**Hauling Costs**

| Species | $ / MBF | Trips/Day | MBF / Load |
|---|---|---|---|
| Douglas - Fir | $0.00 | 2.0 | 3.6 |
| Western Hemlock / Fir | $0.00 | 2.0 | 3.5 |
| Alder (Red) | $0.00 | 2.0 | 3.0 |

# Timber Sale Appraisal
# Little Salander Headwaters

## Sale CS-341-2016-10-

**District: Coos** **Date: June 01, 2015**

## Logging Costs Breakdown

| Logging | Road Maint | Fire Protect | Hauling | Other P/R appl | Profit & Risk | Slash Disposal | Scaling | Other | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Douglas - Fir** | | | | | | | | | |
| $130.51 | $2.33 | $2.24 | $113.75 | $2.35 | $50.24 | $0.00 | $5.00 | $0.00 | $306.42 |
| **Western Hemlock / Fir** | | | | | | | | | |
| $130.51 | $2.33 | $2.24 | $117.00 | $2.35 | $50.89 | $0.00 | $5.00 | $0.00 | $310.32 |
| **Alder (Red)** | | | | | | | | | |
| $130.51 | $2.44 | $2.24 | $143.00 | $2.35 | $56.11 | $0.00 | $5.00 | $0.00 | $341.65 |

| Specie | Amortization | Pond Value | Stumpage | Amortized |
|---|---|---|---|---|
| Douglas - Fir | $0.00 | $588.41 | $281.99 | $0.00 |
| Western Hemlock / Fir | $0.00 | $481.28 | $170.96 | $0.00 |
| Alder (Red) | $0.00 | $574.66 | $233.01 | $0.00 |

# Timber Sale Appraisal
# Little Salander Headwaters

## Sale CS-341-2016-10-

**District: Coos** **Date: June 01, 2015**

## Summary

**Amortized**

| Specie | MBF | Value | Total |
|---|---|---|---|
| Douglas - Fir | 0 | $0.00 | $0.00 |
| Western Hemlock / Fir | 0 | $0.00 | $0.00 |
| Alder (Red) | 0 | $0.00 | $0.00 |

**Unamortized**

| Specie | MBF | Value | Total |
|---|---|---|---|
| Douglas - Fir | 1,257 | $281.99 | $354,461.43 |
| Western Hemlock / Fir | 675 | $170.96 | $115,398.00 |
| Alder (Red) | 29 | $233.01 | $6,757.29 |

**Gross Timber Sale Value**

**Recovery:** $476,616.72

**Prepared By:** Jon Haynes **Phone:** 541-267-1758

# Summary of "Other Costs" for Timber Sale Appraisals

**Sale Name: Little Salander Headwaters**

**Additional "Other Cost" with additional profit and risk to be added:**

| | Units | Quantity | Cost/unit | Total Cost |
|---|---|---|---|---|
| **Yarding and Loading** | | | | |
| Ground Based Equipment Wash | Hours | 6 | $ 65.00 | $ 390.00 |
| Brand and paint logs | MBF | 1961 | $ 1.00 | $ 1,961.00 |
| Cull sorting/slash piling on landings | landing | 6 | $ 125.00 | $ 750.00 |
| Rig tail/lift trees | lift tree | 4 | $ 150.00 | $ 600.00 |
| Artificial guy anchors(dozer, skidder) | anchor | 1 | $ 500.00 | $ 500.00 |
| Cover landing slash pile w/sheeting | pile | 8 | $ 50.00 | $ 400.00 |

**Total additional "Other Cost" with additional profit and risk to be added** **$ 4,601.00**

**Additional "Other Cost" with no additional profit and Risk**

| | Units | Quantity | Cost/unit | Total Cost |
|---|---|---|---|---|
| Non-required road construction | Stations | | | $ - |
| Non-required road rocking | Cubic Yards | | | $ - |
| Stream clearance | Feet | | | $ - |
| Scaling (high piece count) | MBF | | $ 2.00 | $ - |
| | | | | $ - |

**Total additional "Other Cost" with no additional profit and Risk** **$ -**

**SUMMARY OF CONSTRUCTION COST**
**Little Salander Headwaters**

## Project 1A: Road and Landing Construction

Points: B to C Length: 365' Type: 14' no ditch

| | | | | | |
|---|---|---|---|---|---|
| Excavator | 25 | hrs at | $140.00 | per hour | $3,500.00 |
| Cat time | 25 | hrs at | $140.00 | per hour | $3,500.00 |
| Dump Truck - haul 860 yds to Pt D (0.6 mi RT) | 15 | hrs at | $100.00 | per hour | $1,500.00 |
| Grader | 1 | hrs at | $85.00 | per hour | $85.00 |
| Laborer | 25 | hrs at | $38.00 | per hour | $950.00 |

**Total Project 1A:** **$9,535.00**

**Move-in (includes extra time for walking equipment in)**

| Equipment | Miles | hrs/RT | Lowboy Rate/hr | Total |
|---|---|---|---|---|
| Excavator | 35 | 7 | $125.00 | $875.00 |
| Cat | 35 | 7 | $125.00 | $875.00 |
| Dump Truck | 35 | 6 | $125.00 | $750.00 |
| Grader | 35 | 6 | $125.00 | $750.00 |

**Total Move-in:** **$3,250.00**

**Project 1 Total** **$12,785.00**

## Project 2A: Road Improvement

Points: A to B Length: 2400' Type: 14' no ditch

| | | | | | |
|---|---|---|---|---|---|
| Excavator - cleanup, brushing | 3 | hrs at | $140.00 | per hour | $420.00 |
| Cat time - fill in tank trap, smooth road | 3 | hrs at | $140.00 | per hour | $420.00 |
| Grader time - blade road | 3 | hrs at | $85.00 | per hour | $255.00 |
| Laborer | 3 | hrs at | $38.00 | per hour | $114.00 |

**Total Project 2A:** **$1,209.00**

## Project 2B: Landing Improvement

Point: D Length: n/a Type: n/a

| | | | | | |
|---|---|---|---|---|---|
| Excavator - prepare for waste material | 2 | hrs at | $140.00 | per hour | $280.00 |
| Cat Time - push and compact waste material | 5 | hrs at | $140.00 | per hour | $700.00 |
| Laborer | 5 | hrs at | $38.00 | per hour | $190.00 |

**Total Project 2B:** **$1,170.00**

## Project 2C: Road Improvement

Points: E to F Length: 350' Type: 14' no ditch

| | | | | | |
|---|---|---|---|---|---|
| Cat time - smooth road surface | 5 | hrs at | $140.00 | per hour | $700.00 |
| Laborer | 5 | hrs at | $38.00 | per hour | $190.00 |

**Total Project 2C:** **$890.00**

**SUMMARY OF CONSTRUCTION COST**
**Little Salander Headwaters**

## Project 2D: Road Improvement

Points: G to H  Length: 3735'  Type: 14' w/ditch

| | | | | | | |
|---|---|---|---|---|---|---|
| Grader time - clean ditches, blade road | 2 | hrs at | $85.00 | per hour | $170.00 | |
| Laborer | 2 | hrs at | $38.00 | per hour | $76.00 | |
| | | | | **Total Project 2D:** | | **$246.00** |

## Project 2E: Road Improvement

Points: H to I  Length: 900'  Type: 14' no ditch

| | | | | | | |
|---|---|---|---|---|---|---|
| Cat time - smooth road surface | 5 | hrs at | $140.00 | per hour | $700.00 | |
| Laborer | 5 | hrs at | $38.00 | per hour | $190.00 | |
| | | | | **Total Project 2E:** | | **$890.00** |

## Project 2F: Road Improvement

Points: B to L  Length: 5233'  Type: 14' no ditch

| | | | | | | |
|---|---|---|---|---|---|---|
| Cat time - smooth road surface | 3 | hrs at | $140.00 | per hour | $420.00 | |
| Grader time - clean ditches, blade road | 4 | hrs at | $85.00 | per hour | $340.00 | |
| Laborer | 2 | hrs at | $38.00 | per hour | $76.00 | |
| Point: N 18" culvert (includes installation) | | ft at | $17.00 | per ft | $680.00 | |
| 18" bands | 1 | bands at | $19.00 | per band | $19.00 | |
| | | | | **Total Project 2F:** | | **$1,535.00** |

## Project 2G: Road Improvement

Points: J to K  Length: 1042'  Type: 14' no ditch

| | | | | | | |
|---|---|---|---|---|---|---|
| Grader time - blade road | 1 | hrs at | $140.00 | per hour | $140.00 | |
| | | | | **Total Project 2G:** | | **$140.00** |
| | | | | **Project 2 Total** | | **$6,080.00** |

**SUMMARY OF CONSTRUCTION COST**
**Little Salander Headwaters**

## Project 3: Rock Stockpile

| | | | | |
|---|---|---|---|---|
| Location: | 8000/9000 Junction | | | |
| Measured amount: | 1400 tons | | | |
| Size: | 1 1/2" - 0" | | | |
| Cost per ton at crusher: | | | $10.00 | per ton |
| Haul cost per ton: | | | $11.35 | per ton |
| | Truck Rate | $87.00 $/hr | | |
| | Round Trip time | 3 hr | | |
| | Truck Capacity | 23 tons/load | | |
| Piling and shaping cost per ton: | | | $1.50 | per ton |
| Total cost per ton: | | | $22.85 | per ton |
| Total tons: | | | 1400 | tons |
| **Total Cost for Stockpile rock:** | | | **$31,990.00** | |

**Project 3 Total** **$31,990.00**

**Total Project Costs** **$50,855.00**

# TIMBER SALE SUMMARY

## Little Salander Headwaters

**1. Type of Sale:** Final Harvest, Recovery, Sealed Bid

**2. Boundary Lines:** Timber sale boundaries are marked on the ground with white "Timber Sale Boundary" posters, red flagging, and red paint at locations shown on the Exhibit "A".

**3. Revenue Distribution:** 100% CSL; 100% Douglas County

**4. Sale Acreage:** The total sale area is approximately 66 acres. Sale acreage was determined from LIDAR imagery using electronic digitizing with the ArcMap 10.1 GIS program. The cruise expansion acres include only the timbered acres and not existing interior roads or landings.

| | Posted Acres | Interior Roads/Landings | Non-Stocked Acres | Net Cruise Acres | Net Harvest Acres |
|---|---|---|---|---|---|
| **Sale Area** | 69.46 | 3.67 | .10 | 65.69 | 65.79 |

**5. Volume by Species**

| Species | Total Volume (MBF) | Volume (MBF) per Acre |
|---|---|---|
| Douglas-fir | 1257 | 19.1 |
| Hemlock | 675 | 10.3 |
| Red Alder | 29 | .4 |
| **Total** | 1961 | 29.8 |

**6. Grade:** (by Percent,)

| Species | 3 Peeler % | Special Mill % | 2 Saw (12"+) % | 3 Saw % (10" – 11") % | Big 3 Saw % | 4 Saw % (8" – 9") % | 6" – 7" % Hardwood |
|---|---|---|---|---|---|---|---|
| Douglas-fir | | | 52 % | 37 % | | 11 % | |
| Hemlock | | | 30 % | 58 % | | 12 % | |
| Red Alder | | | 22 % | 39 % | | | 39 % |

**7. Cruise:** The sale area was variable plot cruised using a nested Big BAF plot method. The Big BAF method is a combination of count plots and individually measured trees. Plots were spaced 150 feet apart on cruise lines spaced 330 feet apart. A 40 BAF full plot was used to determine tree counts for all species. Trees were sighted in at DBH. A total of 62 count plots were installed. A 250 BAF full plot at DBH was taken on every plot to determine which Douglas-fir trees would be fully measured. A total of 63 Douglas-fir trees were measured for DBH, height, grade, and defect. Minor species were measured on every other plot with a 40 BAF at DBH. A total of 26 hemlock and 5 red alder trees were fully measured. Cruise data was compiled using Superace. Cruising was done by ODF Coos District staff Mickey, Haynes, and Hall in December 2014 and January 2015.

**8. Grading:** All trees were graded according to the Official Bureau Log Scaling and Grading Rules. Trees were graded to maximize grade where possible and field net volume was calculated by converting all logs to 40 foot lengths. Additional deductions where made for hidden defect and for breakage (Table B).

A. Summary data:

| **Diam** | **Ht. Stand** | **Form Pt.** | **Form Factor** | **CV %** | **SE %** |
|---|---|---|---|---|---|
| DBH | 5" DIB Conifer<br>6" DIB Hardwood | All species: DBH | Recorded for all cruised trees by estimate and measure | 59.6 % | 7.6 % |

B. Defect and Breakage Summary:

BY PERCENT

| SPECIES | CRUISED | HIDDEN DEFECT | BREAKAGE | TOTAL % |
|---|---|---|---|---|
| DOUGLAS FIR | 4 | 3 | 3 | 10 |
| HEMLOCK | 4 | 4 | 2 | 10 |
| RED ALDER | 3 | 6 | 6 | 15 |

C. Stand Data:

| SPECIES | DBH | TREES/ACRE | BASAL AREA/AC | NET MBF/ACRE |
|---|---|---|---|---|
| DOUGLAS FIR | 17" | 104 | 163 | 19.1 |
| HEMLOCK | 18" | 39 | 70 | 10.3 |
| RED ALDER | 12" | 10 | 8 | < 1 |

D. Green Tree Retention: There are five (5) Green Tree Reserve (GTR) areas associated with this sale that are reserved from cutting. These areas consist of several Type N perennial, several Type N seasonal stream buffers, and a midslope seasonal seep. All GTR is located outside the posted sale boundaries and was not included in the timber cruise. No GTR volume is removed from the cruise. A total of 370 GTR are distributed across the sale for an average of 5.3 GTR per acre. The FPA requirement for this sale is 149 leave trees. The table below summarizes the GTR areas.

| GTR Area | D-fir Count | Hemlock Cedar Spruce Count | Alder Maple Myrtle Count |
|---|---|---|---|
| Type N Perennial Stream Buffers | 88 | 52 | 90 |
| Seasonal Drainages & Seeps | 80 | 16 | 44 |
| TOTALS | 168 | 68 | 134 |

E. Down Wood: The down woody debris requirement of this sale is to leave 60 – 120 cubic feet per acre of hard logs across the sale area. This will be achieved by retaining hard logs containing a minimum of 20 cubic feet for any individual piece. Existing down wood can be used to achieve this target provided they meet the definition of a hard log (sound wood in decay class 1 or 2 indicated by intact bark and original wood color).

**9. Timber Description:** Timber in the western portion is predominately 53 year-old third growth Douglas-fir with some western hemlock mixed in. Stocking is medium. Portions of the sale area were commercially thinned approximately 17 years ago. The eastern portion is predominately 37 year-old third growth Douglas-fir of medium stocking with some scattered larger western hemlock.

**10. Topography:** The timber sale area is primarily south facing with slopes greater than 65 percent. Type N perennial and seasonal originate within the unit. The eastern portion is east facing with steep terrain east of the 7740 road and gentle terrain further north.

**11. Logging Method:** The majority of the timber sale area is designed to be logged from new and existing cable landings or short jump-up spurs located along the 7740 and 7810 roads. Construction of spur B - C will facilitate logging the eastern portion of the sale area. The extreme eastern portion can be a ground-based operation from the existing 7745 and 7746 roads. Ground-based logging equipment will be required to be washed prior to entering the Elliott State Forest. A marbled murrelet management area abuts the eastern sale boundary and a chainsaw restricted area abuts the western sale boundary. Logging restricted areas are in close proximity to the western sale boundary. Full suspension will be required while yarding over the posted stream buffers and other drainages shown on Exhibit A. Single end suspension will be maintained over the remainder of the sale areas. Dozer tailholds may be utilized along the 7740, 7742, 7745, and 7746 roads. Dozer tailholds/guyline anchors, and up to 4 lift trees to improve deflection have been costed for in the appraisal. The sale area is designed for dry season operation.

**12. Access:** (All miles approximate). To access the timber sale area from State Highway 38 take the Mill Creek County Road (DCR#3). Proceed south on DCR#3 for 5.8 miles to the 7700 road (Cougar Pass Road). Turn right and proceed up the 7700 road 2.3 miles to the junction with the 7000 road at Cougar Pass. Turn left on the 7000 road and proceed for .5 miles to the 7740 road. The 7740 road is a dirt road and can be accessed via ATV or by foot. The southern part of the sale area can be by accessed by vehicle from the 7800 road.

**13. Projects:** See attached "Project Cost Summary Sheet"

Project No. 1: Road and Landing Construction

Project No. 2: Road and Landing Improvement

Project No. 3: Rock Stockpile

# CRUISE VOLUME COMPUTATION REPORT

| | | | |
|---|---|---|---|
| SALE NAME: | Little Salander Headwaters | DATE: | 04/23/2015 |
| LEGAL LOCATION: | Section 3, T23S, R10W<br>WM. Douglas County, OR | BY: | J. Haynes |

## FIELD CULL PERCENTAGE

**Sale Area**

| Species | Doug-fir | Spruce | Cedar | Hemlock | Red Alder | Bigleaf Maple |
|---|---|---|---|---|---|---|
| Field cull | 4% | 0 | 0% | 4 | 3% | 0 |

## NET FIELD VOLUME MBF (Gross vol. less field cull)

| SPECIES>>>>> | Doug-fir | Spruce | Cedar | Hemlock | Red Alder | Bigleaf Maple | TOTAL |
|---|---|---|---|---|---|---|---|
| **Sale Area** | 1337 | 0 | 0 | 718 | 33 | 0 | 2088 |
| less GTR vol | | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | 1337 | 0 | 0 | 718 | 33 | 0 | 2088 |

## HIDDEN DEFECT AND BREAKAGE

| Species | Doug-fir | Spruce | Cedar | Hemlock | Red Alder | Bigleaf Maple |
|---|---|---|---|---|---|---|
| Hidden cull | 0.03 | 0 | 0 | 0.04 | 0.06 | 0 |
| Breakage | 0.03 | 0 | 0 | 0.02 | 0.06 | 0 |
| **TOTAL** | 0.06 | 0.00 | 0.00 | 0.06 | 0.12 | 0.00 |

## NET VOLUME BY MBF BY AREA

| SPECIES>>>>> | Doug-fir | Spruce | Cedar | Hemlock | Red Alder | Bigleaf Maple | TOTALS |
|---|---|---|---|---|---|---|---|
| **Sale Area** | 1257 | 0 | 0 | 675 | 29 | 0 | 1961 |
| **TOTALS** | **1257** | **0** | **0** | **675** | **29** | **0** | **1961** |

## NET VOLUME BY GRADE AND MBF

| Grade >>>>>>>>>>> | | 2PEE | 3PEE | S.M. | 2SAW (12"+) | 3SAW (10"-11") | Big 3 SAW | 4SAW (8"-9") | (6"-7") |
|---|---|---|---|---|---|---|---|---|---|
| **Sale Area** | Doug-Fir | 0 | 0 | 0 | 654 | 465 | 0 | 138 | 0 |
| | Hemlock | 0 | 0 | 0 | 202 | 392 | 0 | 81 | 0 |
| | Red Alder | 0 | 0 | 0 | 6 | 11 | 0 | 0 | 12 |
| | Cedar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Maple | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## GRADE DISTRIBUTION BY PERCENT

| Grade >>>>>>>>>>> | | 2PEE | 3PEE | S.M. | 2SAW (12"+) | 3SAW (10"-11") | Big 3 SAW | 4SAW (8"-9") | (6"-7") |
|---|---|---|---|---|---|---|---|---|---|
| **Sale Area** | Doug-fir | 0% | 0% | 0% | 52% | 37% | 0% | 11% | 0% |
| | Hemlock | 0% | 0% | 0% | 30% | 58% | 0% | 12% | 0% |
| | Red Alder | 0% | 0% | 0% | 22% | 39% | 0% | 0% | 39% |
| | Cedar | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| | Maple | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

## Operating Periods Restrictions Matrix for
## Little Salander Headwaters
## 341-16-10

| **Harvesting** | January | | Febuary | | March | | April | | May | | June | | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1st | | 1st | | 15th | 16th | | | 7th | 8th | 5th | 6th | 15th | 16th | 14th | 15th | | | | |
| Ground-based Yarding | | | | | | | | | | | | | | | | | | | | | | | | |
| Cable Yarding on Unsurfaced Roads | | | | | | | | | | | | | | | | | | | | | | | | |
| Chain Saw use in MMMA* - Buffer (includes establishment of guylines and tailholds) | | | | | | | | | | | | | | | | | | | | | | | | |
| Logging Activity in Logging Restricted Areas and MMMA - Occupied Habitat (includes guylines and tailholds) | | | | | | | | | | | | | | | | | | | | | | | | |

| **Hauling** | January | | Febuary | | March | | April | | May | | June | | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1st | | 1st | | 15th | 16th | | | | | 5th | 6th | 15th | 16th | | 15th | | | | |
| Log Hauling on Unsurfaced Roads | | | | | | | | | | | | | | | | | | | | | | | | |
| Log and Rock Haul adjacent to Type F streams, 1000 Rd, 7500 Rd, 9000 Rd | | | | | | | | | | | | | | | | | | | | | | | | |

| **Project Work** | January | | Febuary | | March | | April | | May | | June | | July | | August | | September | | October | | November | | December | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1st | | 1st | | 15th | 16th | | | | | 5th | 6th | 15th | 16th | | 15th | | | | |
| Projects 1 & 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-project Roads and Landings | | | | | | | | | | | | | | | | | | | | | | | | |
| Project 2F in MMMA and Non-project Roads and Landings in MMMA | | | | | | | | | | | | | | | | | | | | | | | | |

Operations Allowed

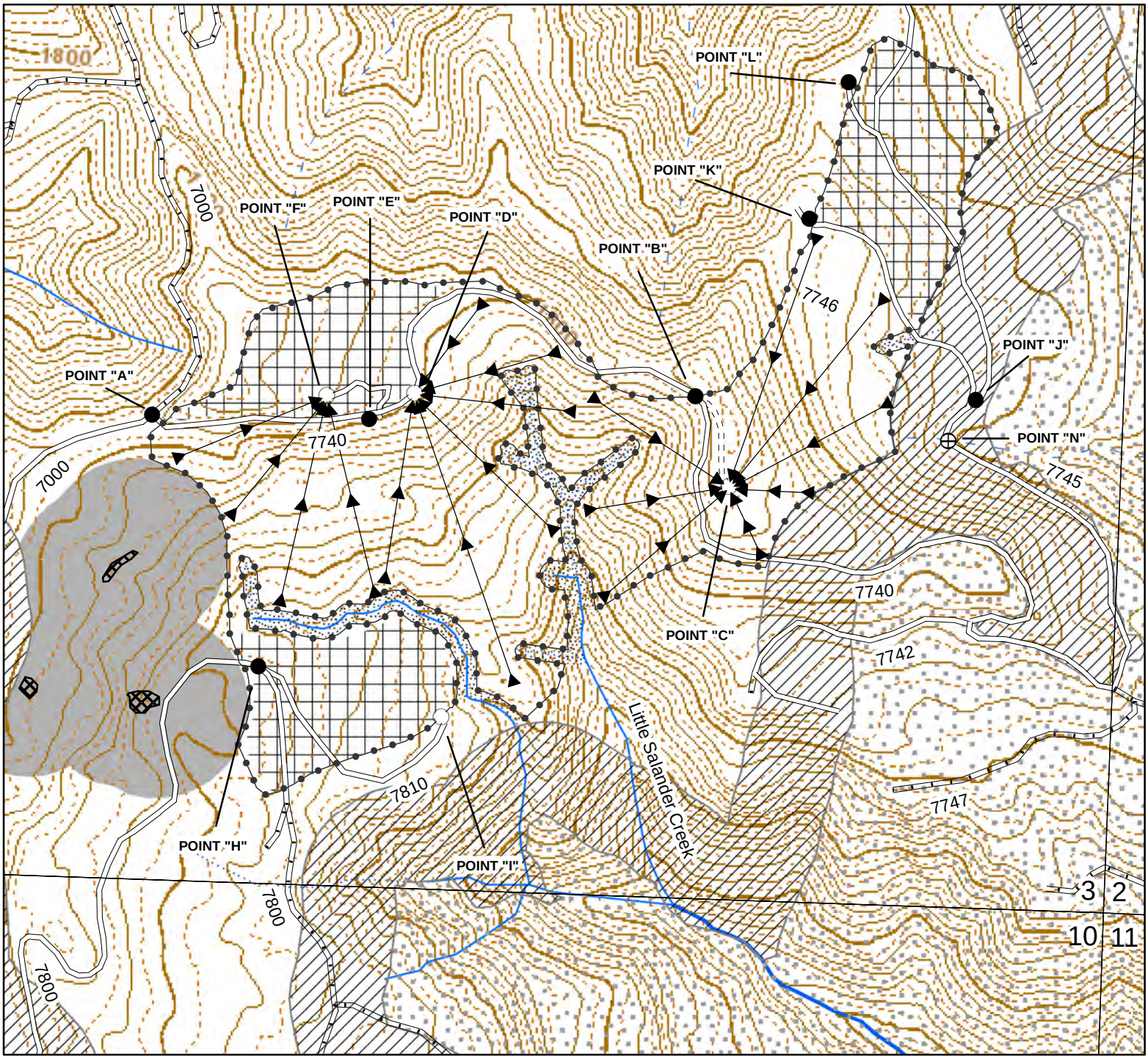
Activity Restricted 2 hours before sunset through 2 hours after sunrise

Operations Prohibited - T & E

Operations Prohibited for weather conditions: unless otherwise approved in writing by STATE

* MMMA means Marbled Murrelet Management Area, consisting of inner Occupied Habitat and outer Buffer.

Operating Matrix represents the seasonal restrictions contained within the body of the timber sale contract. See Section 2455 for further information on seasonal restrictions.




# LOGGING PLAN
## Sale No. 341-16-10
## Little Salander Headwaters

Portions of Section 3
T23S, R10W, W.M.
Douglas County, Oregon
Regulated Use Area CS-2
100% CSL

66 NET
HARVEST ACRES

N

500 250 0 500
Feet

1:6,000 1 inch = 500 feet
20 foot contours

Timber Sale Boundary

**Project Points**
- Culvert
- Landing
- Road Point

**Roads**
- Existing Roads - STATE Maintained
- Existing Roads - Purchaser Maintained
- New Construction
- Logging Restricted Area
- Chainsaw Restricted Area
- Cable Yarding
- Ground-based Operations

**Streams**
- Type F Stream
- Perennial Type N Stream
- Seasonal Type N Stream
- Unclassified
- Streambuffers / Green Tree Retention Areas

**Marbled Murrelet Management Area**
- Buffer
- Occupied Habitat

The information shown on Exhibit "A" map(s) are approximate locations. Exact locations of features represented by map symbols will be determined on site and shall depend upon the conditions that exist on site. Activities shall be conducted based upon features determined on site rather than features shown on maps.