ABSTRACT

Six series of photographs display different forest residue loading levels, by size classes, for areas of like timber type and cutting practice.

Information with each photo includes measured weights, volumes and other residue data, information about the timber stand and harvest or thinning actions, and fuel ratings.

These photo series provide a fast and easy-to-use means for quantifying and describing existing and expected residues.

KEYWORDS: Residue (forest), residue management fuel (waste wood); slash (Douglas-fir--hemlock) (Douglas-fir--hardwood), management (forest) forest residues estimation.

COOPERATIVE ACKNOWLEDGMENT

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This file was created by scanning the printed publication. Text errors identified by the software have been corrected; however, some errors may remain.

LIST OF PLANT SPECIES CITED

cherry..... *Prunus* spp.
chinquapin ..... *Castanopsis* spp.
Douglas-fir..... *Pseudotsuga menziesii* (Mirb.) Franco
lodgepole pine ..... *Pinus contorta* Dougl.
madrone..... *Arbutus* spp.
ponderosa pine ..... *Pinus ponderosa* Laws.
Port-Orford-cedar ..... *Chamaecyparis Lawsoniana* (A. Murr.) Parl.
red fir..... *Abies* spp.
tanoak ..... *Lithocarpus densiflorus* (Hook. Y& Arn.) Rehd:
vine maple ..... *Acer circinatum* Pursh
western hemlock ..... *Tsuga heterophylla* (Raf.) Sarg.
western redcedar..... *Thuja plicata* Donn
western white pine ..... *Pinus mcnticola* Dougl.
white fir ..... *Abies concolor* (Gord. & Glend.) Lindl.

METRIC CONVERSIONS

1 acre	=	0.4047 hectare
2.471 aces	=	1 hectare
1 cubic foot	=	0.02832 cubic meter
35.31 cubic feet	=	1 cubic meter
1 foot	=	0.3048 meter
3.281 feet	=	1 meter
1 inch	=	2.54 centimeters
0.3937 inch	=	1 centimeter
1 ton (short)	=	0.907 ton (metric)
1.102 tons (short)	=	1 ton (metric)

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WHAT ARE THESE PHOTO SERIES?

These photo series are arrays of photos, with each array showing different residue loading levels generated from like timber types and cutting practices. Each photo is supplemented with information which includes:

- Measured quantities by size classes, average depth, ground area covered, and other residue data.
- Harvesting or thinning information.
- Fuel ratings.

Thus, the series provide a basis for quantifying and describing existing and expected residue loadings on other areas and serve as a communication link between users.

WHY ARE THEY NEEDED?

Timber harvesting, silvicultural practices, and land clearing operations generate forest residues on nearly 1.5 million acres annually in Washington and Oregon; the trend toward more partial cutting and less clearcutting will increase acres cutover in subsequent years if the volume cut remains constant.

Although some residues are beneficial for such purposes as nutrient cycling, soil protection, wildlife cover, and microclimate effect, excessive residues adversely affect the forest environment in many ways. Much of the forest. contains residues in undetermined but excessive quantities from the standpoints of. resource use, protection, and management. To reduce residues to at level considered desirable, estimates are needed on quantities that now exist or will be created by sortie activity.

Inventory techniques, such as the planar intersect method, are very useful when a high degree of accuracy is needed but are tine consuming zinc costly to apply extensively. Photo series can be used to make fast, easy, and inexpensive quantifications of residue, adequate for most management needs.

There has been no wary for all resource disciplines to become readily familiar with residue volumes and descriptions so that they can make quantitative inputs to residue management. Likewise, because fuel rating systems are specialized and subjective, then too are not readily adapted to other environmental components. These deficiencies can be overcome with the photo series.

HOW CAN THEY BE USED?

Inventory of Down Residue

Loadings in various residue size classes, average residue depth, and ground area covered are characteristics that are visible in the photographs; hence, users can

estimate any of these characteristics on an area being inventoried by comparing them with the photos as follows:

1. Observe each characteristic of the residue on the ground (e. g., 3.1- to 9-inch loading).
2. Select a photo which nearly matches, or photos that bracket, the observed characteristic.
3. Obtain the quantitative value for the characteristic being estimated from the data shoot accompanying the selected photo (or interpolate a value between photos).

These steps arc repeated for each characteristic desired. If the general area being inventoried has zones of obvious differences in residue loading', the user should consider malting separate determinations for each zone, which can then be weighted and cumulated for the whole area.

Residue characteristics not distinguishable in the photographs arc duff and litter depth, proportion of sound residue by species, and proportion rotted. If values for these characteristics are desired in an inventory, they must be derived from independent sampling or observations.

Inventory information can be used by land managers to (1) evaluate impacts residues have on various aspects of forest management, (2) identify areas of unacceptable residue loading, (3) identify priority areas for treatment, (4) estimate amount of utilizable material, and (5) predict fire behavior characteristics.

Determination of Desired Residue Level

Land management objectives can be more nearly achieved if a team of appropriate specialists can participate in specifying residues which should remain on site after completion of a cutting activity. Individuals helping with these determinations can study the photo series to recognize the appearance of various quantities and distributions of residue. With this knowledge, each individual can describe in quantitative terms the residue he believes should be retained to meet environmental concerns and goals of his particular specialty. The group can then use the photo series as a communication tool to resolve differences in arriving at a desired level.

After treatment, the degree to which objectives were achieved can be judged by comparing observed posttreatment loading with the desired level description.

Prediction of Residues From Planned Cutting and Residue Changes From Treatments

Photo series are a rudimentary aid for predicting amounts of residue from cutting and residue changes from treatments. Many factors, such as condition of timber stand, topography, logging method, and utilization intensity, affect the volume of resulting residues, so users should bear in mind that these series depict only a few of the possible combinations.

To predict residue volumes from planned cutting, the user compares timber volume and size information from cutting plans with this kind of information in the

photo series. Selecting a photo series level or levels with similar stand characteristics, the user refers to data sheet loading, considers factors which differ from the photo series situations, and quantifies the loading expected.

Predicted loadings can be used to support changes in cutting and removal actions and to plan appropriate treatments.

To predict residue changes from treatments, the user studies the treated and untreated levels in the photo series to gain knowledge of relative changes or reductions affected by sample treatments. Then, comparing residue inventory or preharvest prediction information with levels in the series, the user determines the change a specific treatment may produce.

Predicted change in residue from treatments call aid in (1) identifying treatments that will reduce residues to the desired level, (2) selecting the most cost-effective treatments, and (3) estimating tons that will be consumed by fire. Improved accuracy in estimating tons consumed by fire will increase reliability of particulate and chemical compound emission calculations.

HOW WERE THEY DEVELOPED?

Areas photographed for these series were selected to show typical residue loading variations resulting from commonly applied harvest and cultural practices in major vegetative types of the coastal Pacific Northwest. Photos were taken and data

collected as follows:

1. Areas were photographed and the material in the photo area sampled in accordance with U. S. Forest t Service national guidelines.[1]

2. Measurement technique was in accordance with the "Handbook for Inventorying Downed Woody Material." [2]

3. Timber stand, logging, and residue treatment information was obtained from timber sale or project records in field offices.

4. Forest Service Region 6 fuel types were assigned by a panel of Forest Service fuel specialists. [3]

[1] USDA Forest Service. 1975. National fuel classification and inventory system, preliminary draft. 61 p. , illus. Washington Office, Washington, D.C.

[2] Brown, James K. 1974. Handbook for inventorying downed woody material. USDA For. Serv. Gen. Tech. Rep. INT-16, 24 p., illus. Intermt. For. and Range Exp. Stn., Ogden, Utah.

[3] USDA Forest Service Region 6. 1968. Guide for fuel type identification. 48 p., illus. Portland, Oreg.

HOW CAN THEY BE SUPPLEMENTED?

If users in the coastal Pacific Northwest find they have important local residue loadings which are not adequately represented, they can supplement these series or develop additional series by following procedures described in the referenced documents. The series in this publication may be usable, in total or in part, in appropriate vegetative types in other regions.

These series do not show residue loadings in stands undisturbed by cutting activities. Natural residue photo series may be developed in the future to aid in inventorying such areas.

A companion publication, containing photo series for use in ponderosa pine, ponderosa pine and associated species, and lodgepole pine types, will be published b\ the Pacific Northwest Forest and Range Experiment Station.

HOW ARE LEVELS IN THESE SERIES CODED?

The data for each level are presented on the page facing the photo. Facing picture and data pages have the same code for the residue situation shown. The code shows:

a. Order of rank from tightest loading to heaviest loading shown in the series of photographs.

b. Forest type, e.g., DF = Douglas-fir--hemlock, DFHD = Douglas-fir--

c. Forest size class, where:
l - < 5-inch d. b. h.

2 = 5- to 11-inch d. b. h.

3 = 12- to 20-inch d. b. h.

4 = >20-inch d. b. h.

d. Cutting practice, where:

CC = clearcut

PC = partial cut (shelterwood, selection, overstory removal)

TH = precommercial thinning

Example: 1-DL-4-CC is the first photo in the series for Douglas-fir--hemlock, > 20-inch diameter trees, after harvest by clearcutting.

DOUGLAS-FIR-HEMLOCK

SIZE CLASS 4

CLEARCUT

A SERIES OF 10 LEVELS

Reminders to users:

1. The marker in these photos is 1 foot square, and the pole is painted in contrasting, colors at 1-foot intervals to provide perspective.

2. Stumps are not included in residue quantities.

3. Rotted residue is that which would come apart or splinter when kicked.

1-DF-4-CC

DATA SHEET Residue descriptive code 1-DF-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.0	114
1.1-3.0	1.5	93
3.1-9.0	3.6	252
9.1-20.0	0	0
20.1+	0	0
Total	7.1	459

OTHER MEASUREMENTS

Average residue depth (feet) 0.2

Ground area covered by residue 1/4-inch diameter and larger (percent) 52

Average duff and litter depth (inches) 1.9

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 81

white fir (percent) 16

other (percent) 3

Rotted residue 3.1-inch diameter and larger (percent) 0

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 58

Net volume cruised (M fbm/acre) 54

Average stems/acre cut 55

Average d.b.h. of stems cut (inches) 24

Stand age (years) 200+

Cutting prescription Clearcut

Yarding method Tractor

Slash treatment Machine piled & burned

Period since cut or treatment (months) 12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification LL

REMARKS

2-DF-4-CC

DATA SHEET Residue descriptive code 2-DF-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.4	135
1.1-3.0	7.5	464
3.1-9.0	6.6	439
9.1-20.0	0.7	50
20.1+	0	0
Total	17.2	1,088

OTHER MEASUREMENTS		
Average residue depth	(feet)	0.3
Ground area covered by residue 1/4-inch diameter and larger	(percent)	64
Average duff and litter depth	(inches)	2.3
Sound residue 3.1-inch diameter and larger: Douglas-fir	(percent)	16
vine maple	(percent)	5
	(percent)	
Rotted residue 3.1-inch diameter and larger	(percent)	79

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	72
Net volume cruised (M fbm/acre)	48
Average stems/acre cut	43
Average d.b.h. of stems cut (inches)	30
Stand age (years)	250+
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	YUM*
Period since cut or treatment (months)	<12

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	LL

REMARKS

*Required yarding unmerchantable material (YUM) down to 8 inches in diameter, small end, and 10 feet in length.

3-DF-4-CC

DATA SHEET Residue descriptive code 3-DF-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	0.7	37
1.1-3.0	1.4	84
3.1-9.0	8.0	579
9.1-20.0	11.0	825
20.1+	7.0	460
Total	28.1	1,985

OTHER MEASUREMENTS			
Average residue depth		(feet)	0.2
Ground area covered by residue 1/4-inch diameter and larger		(percent)	41
Average duff and litter depth		(inches)	4.1
Sound residue 3.1-inch diameter and larger	white fir	(percent)	18
	Douglas-fir	(percent)	9
	other	(percent)	3
Rotted residue 3.1-inch diameter and larger		(percent)	70

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	89
Net volume cruised (M fbm/acre)	58
Average stems/acre cut	70
Average d.b.h. of stems cut (inches)	29
Stand age (years)	350+
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	YUM* & broadcast burned
Period since cut or treatment (months)	<12

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	LL

REMARKS

*Required yarding unmerchantable material (YUM) down to 8 inches in diameter, small end and 10 feet in length.

4-DF-4-CC

DATA SHEET Residue descriptive code 4-DF-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	5.6	374
1.1-3.0	7.6	610
3.1-9.0	7.3	647
9.1-20.0	10.7	1,038
20.1+	5.8	615
Total	37.0	3,284

OTHER MEASUREMENTS		
Average residue depth	(feet)	0.9
Ground area covered by residue 1/4-inch diameter and larger	(percent)	99
Average duff and litter depth	(inches)	7.1
Sound residue 3.1-inch diameter and larger Douglas-fir	(percent)	14
western redcedar	(percent)	6
other	(percent)	4
Rotted residue 3.1-inch diameter and larger	(percent)	76

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	60
Net volume cruised (M fbm/acre)	29
Average stems/acre cut	38
Average d.b.h. of stems cut (inches)	34
Stand age (years)	250+
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	YUM*
Period since cut or treatment (months)	<12

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	MH

REMARKS

*Required yarding unmerchantable material (YUM) down to 8 inches in diameter, small end and 10 feet in length.

5-DF-4-CC

DATA SHEET Residue descriptive code 5-DF-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.6	174
1.1-3.0	4.5	361
3.1-9.0	14.3	1,053
9.1-20.0	15.7	1,069
20.1+	8.3	573
Total	45.4	3,230

OTHER MEASUREMENTS		
Average residue depth		(feet) 0.6
Ground area covered by residue 1/4-inch diameter and larger		(percent) 78
Average duff and litter depth		(inches) 3.3
Sound residue 3.1-inch diameter and larger	western hemlock	(percent) 36
	Douglas-fir	(percent) 19
	other	(percent) 12
Rotted residue 3.1-inch diameter and larger		(percent) 33

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	84
Net volume cruised (M fbm/acre)	57
Average stems/acre cut	36
Average d.b.h. of stems cut (inches)	40
Stand age (years)	400
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	YUM*
Period since cut or treatment (months)	12

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	HM

REMARKS

*Required yarding unmerchantable material (YUM) down to 8 inches in diameter, small end and 10 feet in length.

6-DF-4-CC

DATA SHEET Residue descriptive code 6-DF-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	0.5	29
1.1-3.0	0.4	25
3.1-9.0	7.0	514
9.1-20.0	25.1	1,683
20.1+	31.0	2,086
Total	64.0	4,337

OTHER MEASUREMENTS

Average residue depth (feet) 0.3

Ground area covered by residue 1/4-inch diameter and larger (percent) 45

Average duff and litter depth (inches) 2.1

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 45

western hemlock (percent) 6

other (percent) 5

Rotted residue 3.1-inch diameter and larger (percent) 44

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 93

Net volume cruised (M fbm/acre) 62

Average stems/acre cut 44

Average d.b.h. of stems cut (inches) 38

Stand age (years) 160+

Cutting prescription Clearcut

Yarding method High-lead

Slash treatment Fall broadcast burn

Period since cut or treatment (months) 12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification 11

REMARKS

7-DF-4-CC

DATA SHEET Residue descriptive code 7-DF-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	4.9	279
1.1-3.0	11.3	696
3.1-9.0	22.0	1,526
9.1-20.0	13.9	960
20.1+	45.0	3,005
Total	97.1	6,466

OTHER MEASUREMENTS

Average residue depth (feet) 1.1

Ground area covered by residue 1/4-inch diameter and larger (percent) 97

Average duff and litter depth (inches) 7.9

Sound residue 3.1-inch diameter and larger western hemlock (percent) 8

Douglas-fir (percent) 4

(percent)

Rotted residue 3.1-inch diameter and larger (percent) 88

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 48

Net volume cruised (M fbm/acre) 42

Average stems/acre cut 33

Average d.b.h. of stems cut (inches) 25

Stand age (years) 300+

Cutting prescription Clearcut

Yarding method High-lead

Slash treatment YUM*

Period since cut or treatment (months) <6

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS

*Required yarding unmerchantable material (YUM) down to 16 inches in diameter, small end and 10 feet in length.

8-DF- 4-CC

DATA SHEET Residue descriptive code 8-DF-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	4.3	287
1.1-3.0	5.9	472
3.1-9.0	16.1	1,147
9.1-20.0	23.2	1,634
20.1+	54.9	3,777
Total	104.4	7,317

OTHER MEASUREMENTS		
Average residue depth		(feet) 1.0
Ground area covered by residue 1/4-inch diameter and larger		(percent) 92
Average duff and litter depth		(inches) 6.2
Sound residue 3.1-inch diameter and larger	western hemlock	(percent) 21
	Douglas-fir	(percent) 20
	other	(percent) 6
Rotted residue 3.1-inch diameter and larger		(percent) 53

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	89
Net volume cruised (M fbm/acre)	58
Average stems/acre cut	44
Average d.b.h. of stems cut (inches)	42
Stand age (years)	350
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	None
Period since cut or treatment (months)	1

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	HH

REMARKS

9-DF-4-CC

DATA SHEET Residue descriptive code 9-DF-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	4.8	275
1.1-3.0	8.4	518
3.1-9.0	33.8	2,505
9.1-20.0	52.1	3,989
20.1+	47.5	3,227
Total	146.6	10,514

OTHER MEASUREMENTS

Average residue depth		(feet) 1.4
Ground area covered by residue 1/4-inch diameter and larger		(percent) 100
Average duff and litter depth		(inches) 9.8
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 12
	western hemlock	(percent) 11
	other	(percent) 10
Rotted residue 3.1-inch diameter and larger		(percent) 67

HARVEST INFORMATION

Gross volume cruised (M fbm/acre)	79
Net volume cruised (M fbm/acre)	67
Average stems/acre cut	60
Average d.b.h. of stems cut (inches)	29
Stand age (years)	300+
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	None
Period since cut or treatment (months)	6

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING

U.S. Forest Service Region 6 fuel type identification EE

REMARKS

10-DF-4-CC

DATA SHEET Residue descriptive code 10-DF-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	3.6	206
1.1-3.0	11.0	678
3.1-9.0	18.5	1,348
9.1-20.0	30.3	2,152
20.1+	160.0	10,825
Total	223.4	15,209

OTHER MEASUREMENTS		
Average residue depth	(feet)	1.2
Ground area covered by residue 1/4-inch diameter and larger	(percent)	88
Average duff and litter depth	(inches)	8.6
Sound residue 3.1-inch diameter and larger Douglas-fir	(percent)	14
Pacific silver fir	(percent)	2
	(percent)	
Rotted residue 3.1-inch diameter and larger	(percent)	84

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	131
Net volume cruised (M fbm/acre)	79
Average stems/acre cut	55
Average d.b.h. of stems cut (inches)	32
Stand age (years)	300+
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	None
Period since cut or treatment (months)	12

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	HE

REMARKS

DOUGLAS-FIR-HEMLOCK

SIZE CLASS 4

PARTIAL CUT

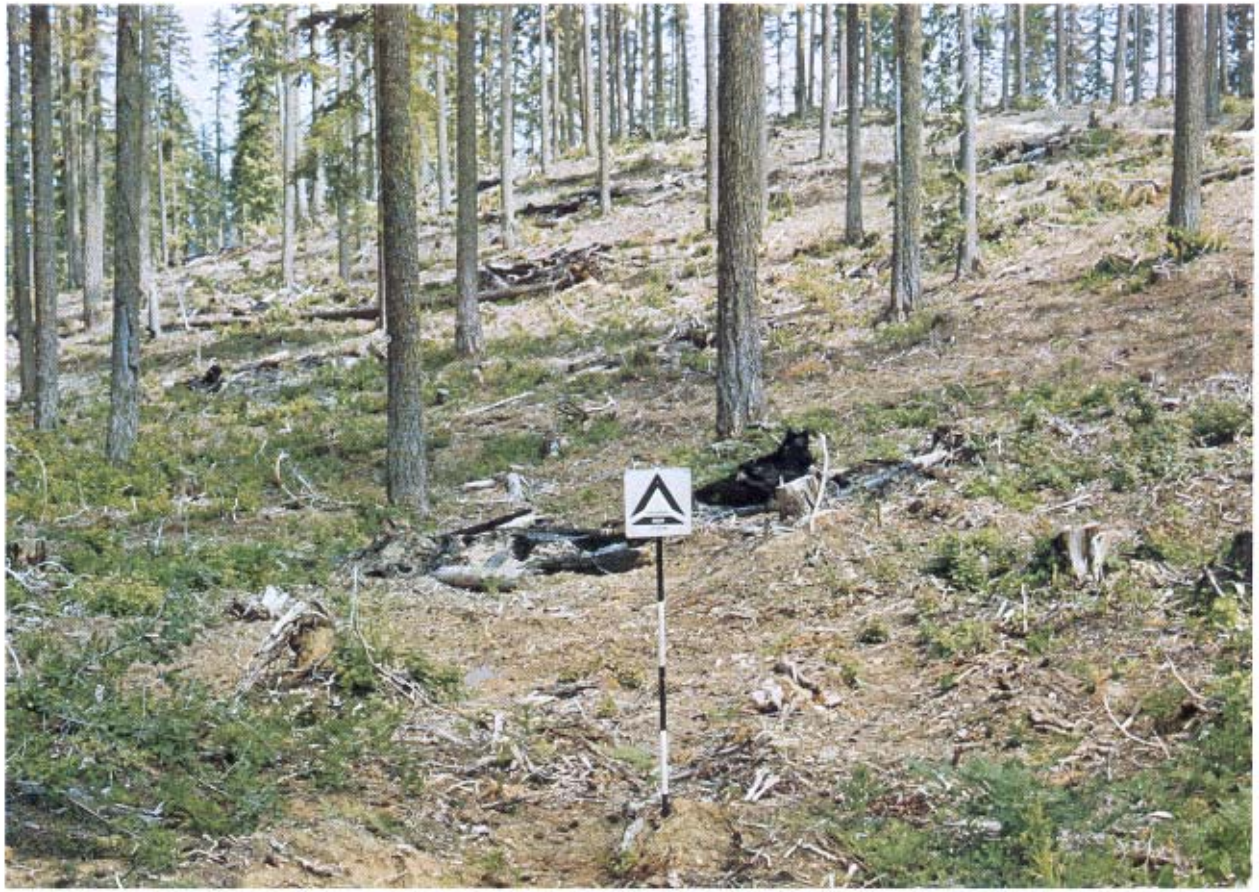
A SERIES OF 9 LEVELS

Reminders to users:

1. The marker in the, photos is 1 root square, and the pole is painted in contrasting colors at 1-root intervals to provide perspective.

2. Stumps are not included in residue quantities.

3. Rotted residue is that which would come apart or splinter when kicked.



1-DF-4-PC

DATA SHEET Residue descriptive code 1-DF-4-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.1	61
1.1-3.0	2.3	143
3.1-9.0	2.3	174
9.1-20.0	1.0	65
20.1+	0	0
Total	6.7	443

OTHER MEASUREMENTS

Average residue depth (feet) 0.1

Ground area covered by residue 1/4-inch diameter and larger (percent) 40

Average duff and litter depth (inches) 0.7

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 79

_____ (percent) ____

_____ (percent) ____

Rotted residue 3.1-inch diameter and larger (percent) 21

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 51

Net volume cruised (M fbm/acre) 39

Average stems/acre cut 52

Average d.b.h. of stems cut (inches) 27

Stand age (years) 300

Cutting prescription Shelterwood

Yarding method Tractor

Slash treatment Machine piled & burned

Period since cut or treatment (months) 12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre ____

Stems remaining/acre ____

Basal area/acre before ____

Basal area/acre after ____

Average d.b.h. before (inches) ____

Average d.b.h. after (inches) ____

Thinning method ____

Slash treatment ____

FUEL RATING

U.S. Forest Service Region 6 fuel type identification LL

REMARKS

2-DF-4-PC

DATA SHEET Residue descriptive code 2-DF-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.9	124
1.1-3.0	3.6	289
3.1-9.0	6.3	483
9.1-20.0	8.1	547
20.1+	0	0
Total	19.9	1,443

OTHER MEASUREMENTS			
Average residue depth		(feet)	0.5
Ground area covered by residue 1/4-inch diameter and larger		(percent)	76
Average duff and litter depth		(inches)	1.4
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent)	54
	western hemlock	(percent)	21
	other	(percent)	21
Rotted residue 3.1-inch diameter and larger		(percent)	4

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	26
Net volume cruised (M fbm/acre)	21
Average stems/acre cut	52
Average d.b.h. of stems cut (inches)	22
Stand age (years)	170+
Cutting prescription	Tree selection
Yarding method	Tractor
Slash treatment	None
Period since cut or treatment (months)	<6

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	HH

REMARKS

3-DF-4-PC

DATA SHEET Residue descriptive code 3-DF-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.6	108
1.1-3.0	2.7	214
3.1-9.0	5.7	389
9.1-20.0	7.9	534
20.1+	3.0	200
Total	20.9	1,445

OTHER MEASUREMENTS		
Average residue depth		(feet) 0.1
Ground area covered by residue 1/4-inch diameter and larger		(percent) 36
Average duff and litter depth		(inches) 0.6
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 84
	western hemlock	(percent) 11
	other	(percent) 5
Rotted residue 3.1-inch diameter and larger		(percent) 0

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	43
Net volume cruised (M fbm/acre)	20
Average stems/acre cut	20
Average d.b.h. of stems cut (inches)	30
Stand age (years)	300
Cutting prescription	Shelterwood
Yarding method	Tractor
Slash treatment	Machine piled & burned
Period since cut or treatment (months)	24

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	LL

REMARKS

A-DP-4-PC

DATA SHEET Residue descriptive code 4-DF-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	3.5	232
1.1-3.0	5.8	461
3.1-9.0	16.0	1,243
9.1-20.0	2.6	258
20.1+	0	0
Total	27.9	2,194

OTHER MEASUREMENTS			
Average residue depth		(feet)	0.8
Ground area covered by residue 1/4-inch diameter and larger		(percent)	95
Average duff and litter depth		(inches)	4.8
Sound residue 3.1-inch diameter and larger	western hemlock	(percent)	63
	white fir	(percent)	3
	other	(percent)	1
Rotted residue 3.1-inch diameter and larger		(percent)	33

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	43
Net volume cruised (M fbm/acre)	33
Average stems/acre cut	94
Average d.b.h. of stems cut (inches)	18
Stand age (years)	250
Cutting prescription	Shelterwood
Yarding method	Tractor
Slash treatment	None
Period since cut or treatment (months)	9

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	HH

REMARKS

5-DF-4-PC

DATA SHEET Residue descriptive code 5-DF-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.4	91
1.1-3.0	3.1	247
3.1-9.0	6.8	488
9.1-20.0	13.2	898
20.1+	10.5	698
Total	35.0	2,422

OTHER MEASUREMENTS		
Average residue depth		(feet) 0.2
Ground area covered by residue 1/4-inch diameter and larger		(percent) 40
Average duff and litter depth		(inches) 1.1
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 84
	western hemlock	(percent) 10
	other	(percent) 1
Rotted residue 3.1-inch diameter and larger		(percent) 5

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	53
Net volume cruised (M fbm/acre)	19
Average stems/acre cut	20
Average d.b.h. of stems cut (inches)	30
Stand age (years)	300
Cutting prescription	Shelterwood
Yarding method	Tractor
Slash treatment	Machine piled & burned
Period since cut or treatment (months)	16

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	LM

REMARKS

6-DF-4-PC

DATA SHEET Residue descriptive code 6-DF-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.6	148
1.1-3.0	6.2	382
3.1-9.0	12.6	893
9.1-20.0	27.6	2,009
20.1+	4.3	282
Total	53.3	3,714

OTHER MEASUREMENTS

Average residue depth (feet) 0.7
Ground area covered by residue 1/4-inch diameter and larger (percent) 89
Average duff and litter depth (inches) 3.3
Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 79
western hemlock (percent) 3
(percent)
Rotted residue 3.1-inch diameter and larger (percent) 18

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 116
Net volume cruised (M fbm/acre) 89
Average stems/acre cut 55
Average d.b.h. of stems cut (inches) 32
Stand age (years) 250+
Cutting prescription Shelterwood
Yarding method High-lead
Slash treatment None
Period since cut or treatment (months) 1

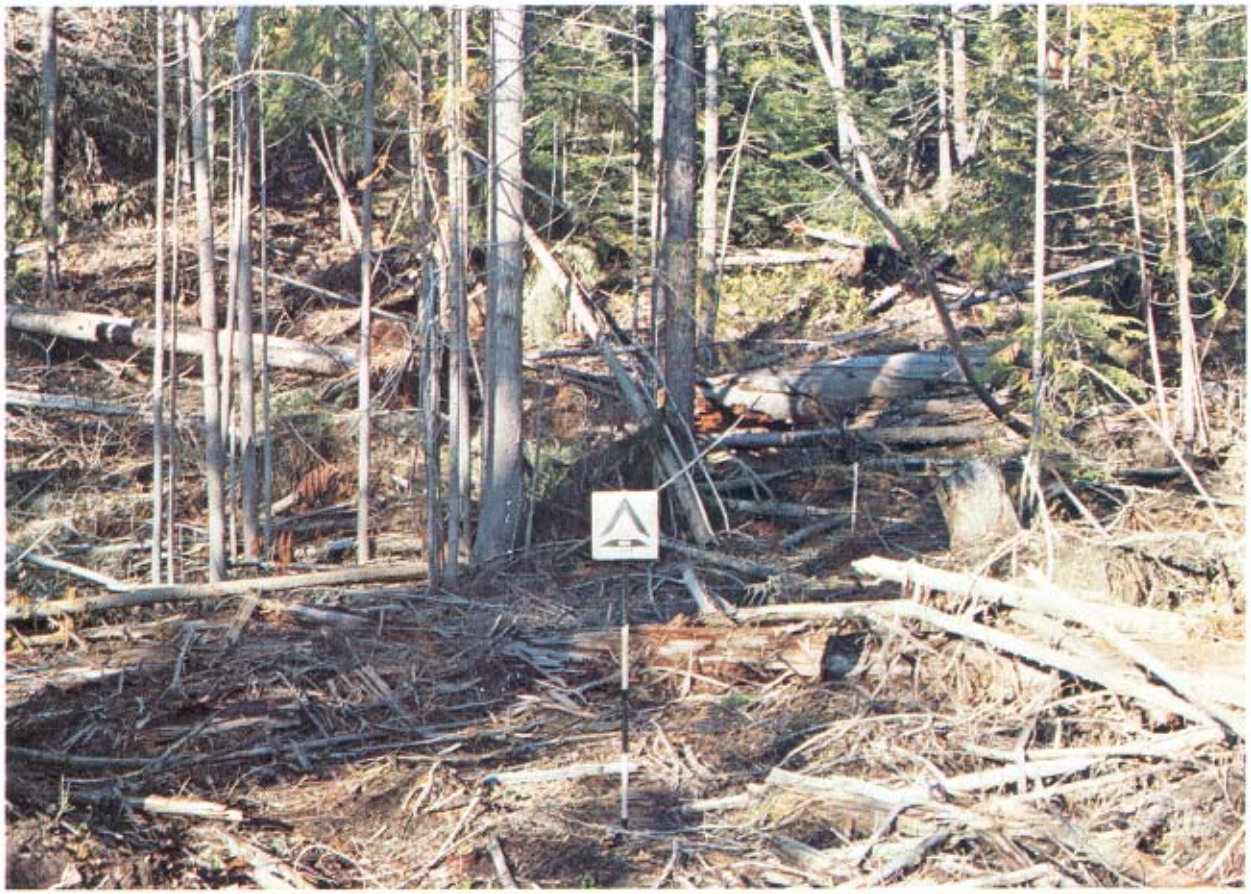
PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre
Stems remaining/acre
Basal area/acre before
Basal area/acre after
Average d.b.h. before (inches)
Average d.b.h. after (inches)
Thinning method
Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS



7-DF-4-PC

DATA SHEET Residue descriptive code 7-DF-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	3.6	240
1.1-3.0	9.5	759
3.1-9.0	14.6	1,128
9.1-20.0	2.5	192
20.1+	31.6	2,463
Total	61.8	4,782

OTHER MEASUREMENTS			
Average residue depth		(feet)	0.7
Ground area covered by residue 1/4-inch diameter and larger		(percent)	96
Average duff and litter depth		(inches)	5.2
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent)	56
	western redcedar	(percent)	35
	other	(percent)	3
Rotted residue 3.1-inch diameter and larger		(percent)	6

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	44
Net volume cruised (M fbm/acre)	28
Average stems/acre cut	15
Average d.b.h. of stems cut (inches)	38
Stand age (years)	250
Cutting prescription	Overstory removal
Yarding method	Tractor
Slash treatment	None
Period since cut or treatment (months)	8

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	HE

REMARKS

8-DF-4-PC

DATA SHEET Residue descriptive code 8-DF-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	3.6	237
1.1-3.0	8.5	680
3.1-9.0	9.9	875
9.1-20.0	26.5	2,588
20.1+	40.2	3,992
Total	88.7	8,372

OTHER MEASUREMENTS			
Average residue depth		(feet)	1.9
Ground area covered by residue 1/4-inch diameter and larger		(percent)	95
Average duff and litter depth		(inches)	8.6
Sound residue 3.1-inch diameter and larger	western redcedar	(percent)	18
	Douglas-fir	(percent)	12
	other	(percent)	2
Rotted residue 3.1-inch diameter and larger		(percent)	68

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	16
Net volume cruised (M fbm/acre)	11
Average stems/acre cut	26
Average d.b.h. of stems cut (inches)	20
Stand age (years)	450
Cutting prescription	Tree selection
Yarding method	Tractor
Slash treatment	None
Period since cut or treatment (months)	8

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	MH

REMARKS

9-DF-4-PC

DATA SHEET Residue descriptive code 9-DF-4-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.3	156
1.1-3.0	4.9	396
3.1-9.0	11.9	879
9.1-20.0	25.6	1,927
20.1+	63.6	4,355
Total	108.3	7,713

OTHER MEASUREMENTS

Average residue depth		(feet) 0.6
Ground area covered by residue 1/4-inch diameter and larger		(percent) 75
Average duff and litter depth		(inches) 3.3
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 56
	western hemlock	(percent) 33
	other	(percent) 2
Rotted residue 3.1-inch diameter and larger		(percent) 9

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 15
Net volume cruised (M fbm/acre) 11
Average stems/acre cut 32
Average d.b.h. of stems cut (inches) 20
Stand age (years) 100+
Cutting prescription Tree selection
Yarding method Rubber-tired skidder
Slash treatment None
Period since cut or treatment (months) 12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre
Stems remaining/acre
Basal area/acre before
Basal area/acre after
Average d.b.h. before (inches)
Average d.b.h. after (inches)
Thinning method
Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification MH

REMARKS

DOUGLAS-FIR-HEMLOCK

SIZE CLASS 3

PARTIAL CUT

A SERIES OF 6 LEVELS

Reminders to users:

1. The marker in these photos is 1 foot square, and the pole is painted in contrasting colors at 1-foot intervals to provide perspective.
2. Stumps are not included in residue quantities.
3. Rotted residue is that which would come apart or splinter when kicked.

1-DF-3-PC

DATA SHEET Residue descriptive code 1-DF-3-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.3	85
1.1-3.0	2.8	224
3.1-9.0	4.8	356
9.1-20.0	0	0
20.1+	0	0
Total	8.9	665

OTHER MEASUREMENTS

Average residue depth		(feet) 0.4
Ground area covered by residue 1/4-inch diameter and larger		(percent) 76
Average duff and litter depth		(inches) 1.3
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 71
	western redcedar	(percent) 13
		(percent)
Rotted residue 3.1-inch diameter and larger		(percent) 16

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 8.2
Net volume cruised (M fbm/acre) 7.9
Average stems/acre cut 41
Average d.b.h. of stems cut (inches) 12
Stand age (years) 60
Cutting prescription Tree selection
Yarding method Tractor
Slash treatment None
Period since cut or treatment (months) 1

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre
Stems remaining/acre
Basal area/acre before
Basal area/acre after
Average d.b.h. before (inches)
Average d.b.h. after (inches)
Thinning method
Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification LM

REMARKS

2-DF-3-PC

DATA SHEET Residue descriptive code 2-DF-3-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.0	112
1.1-3.0	2.1	129
3.1-9.0	10.8	733
9.1-20.0	0	0
20.1+	0	0
Total	14.9	974

OTHER MEASUREMENTS

Average residue depth		(feet) 0.2
Ground area covered by residue 1/4-inch diameter and larger		(percent) 68
Average duff and litter depth		(inches) 1.3
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 96
		(percent)
		(percent)
Rotted residue 3.1-inch diameter and larger		(percent) 4

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 3.0
Net volume cruised (M fbm/acre) 2.8
Average stems/acre cut 35
Average d.b.h. of stems cut (inches) 12
Stand age (years) 50
Cutting prescription Tree selection
Yarding method Rubber-tired skidder
Slash treatment None
Period since cut or treatment (months) 8

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre
Stems remaining/acre
Basal area/acre before
Basal area/acre after
Average d.b.h. before (inches)
Average d.b.h. after (inches)
Thinning method
Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification MM

REMARKS

3-DF-3-PC

DATA SHEET Residue descriptive code 3-DF-3-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.7	116
1.1-3.0	3.6	289
3.1-9.0	14.6	1,057
9.1-20.0	6.8	728
20.1+	0	0
Total	26.7	2,190

OTHER MEASUREMENTS		
Average residue depth	(feet)	0.5
Ground area covered by residue 1/4-inch diameter and larger	(percent)	91
Average duff and litter depth	(inches)	2.0
Sound residue 3.1-inch diameter and larger Douglas-fir	(percent)	47
western redcedar	(percent)	2
	(percent)	
Rotted residue 3.1-inch diameter and larger	(percent)	51

HARVEST INFORMATION	
Gross volume cruised (M fbm/acre)	4.7
Net volume cruised (M fbm/acre)	4.5
Average stems/acre cut	44
Average d.b.h. of stems cut (inches)	13
Stand age (years)	45
Cutting prescription	Tree selection
Yarding method	Tractor
Slash treatment	None
Period since cut or treatment (months)	8

PRECOMMERCIAL THINNING INFORMATION	
Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING	
U.S. Forest Service Region 6 fuel type identification	MH

REMARKS

4-DF-3-PC

DATA SHEET Residue descriptive code 4-DF-3-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.9	108
1.1-3.0	8.0	495
3.1-9.0	21.1	1,546
9.1-20.0	31.9	2,860
20.1+	2.6	281
Total	65.5	5,290

OTHER MEASUREMENTS

Average residue depth	(feet)	0.5
Ground area covered by residue 1/4-inch diameter and larger	(percent)	83
Average duff and litter depth	(inches)	8.2
Sound residue 3.1-inch diameter and larger Douglas-fir	(percent)	45
	(percent)	
	(percent)	
Rotted residue 3.1-inch diameter and larger	(percent)	55

HARVEST INFORMATION

Gross volume cruised (M fbm/acre)	66.1
Net volume cruised (M fbm/acre)	59.6
Average stems/acre cut	105
Average d.b.h. of stems cut (inches)	22
Stand age (years)	90
Cutting prescription	Shelterwood
Yarding method	High-lead
Slash treatment	Fall broadcast burn
Period since cut or treatment (months)	22

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING

U.S. Forest Service Region 6 fuel type identification MH

REMARKS

5-DF-3-PC

DATA SHEET Residue descriptive code 5-DF-3-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	4.5	260
1.1-3.0	18.6	1,146
3.1-9.0	16.3	1,201
9.1-20.0	10.6	898
20.1+	26.6	2,467
Total	76.6	5,962

OTHER MEASUREMENTS

Average residue depth (feet) 0.9

Ground area covered by residue 1/4-inch diameter and larger (percent) 97

Average duff and litter depth (inches) 5.4

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 41

cherry (percent) 1

(percent)

Rotted residue 3.1-inch diameter and larger (percent) 58

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 27.2

Net volume cruised (M fbm/acre) 25.6

Average stems/acre cut 64

Average d.b.h. of stems cut (inches) 24

Stand age (years) 80

Cutting prescription Shelterwood

Yarding method High-lead

Slash treatment None

Period since cut or treatment (months) 10

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification MH

REMARKS

6-DF-3-PC

DATA SHEET Residue descriptive code 6-DF-3-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.8	122
1.1-3.0	2.6	205
3.1-9.0	14.4	1,106
9.1-20.0	4.5	354
20.1+	64.4	4,882
Total	87.7	6,669

OTHER MEASUREMENTS

Average residue depth (feet) 0.3

Ground area covered by residue 1/4-inch diameter and larger (percent) 71

Average duff and litter depth (inches) 1.8

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 61

white fir (percent) 6

other (percent) 2

Rotted residue 3.1-inch diameter and larger (percent) 31

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 6.3

Net volume cruised (M fbm/acre) 5.7

Average stems/acre cut 46

Average d.b.h. of stems cut (inches) 11

Stand age (years) 50

Cutting prescription Tree selection

Yarding method Tractor

Slash treatment Hand piled & burned

Period since cut or treatment (months) 12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification LM

REMARKS

Material 9.1+ inches in diameter was a result of logging old-growth stand in early 1900's.

DOUGLAS-FIR-HEMLOCK

SIZE CLASS 1

PRECOMMERCIAL THINNING

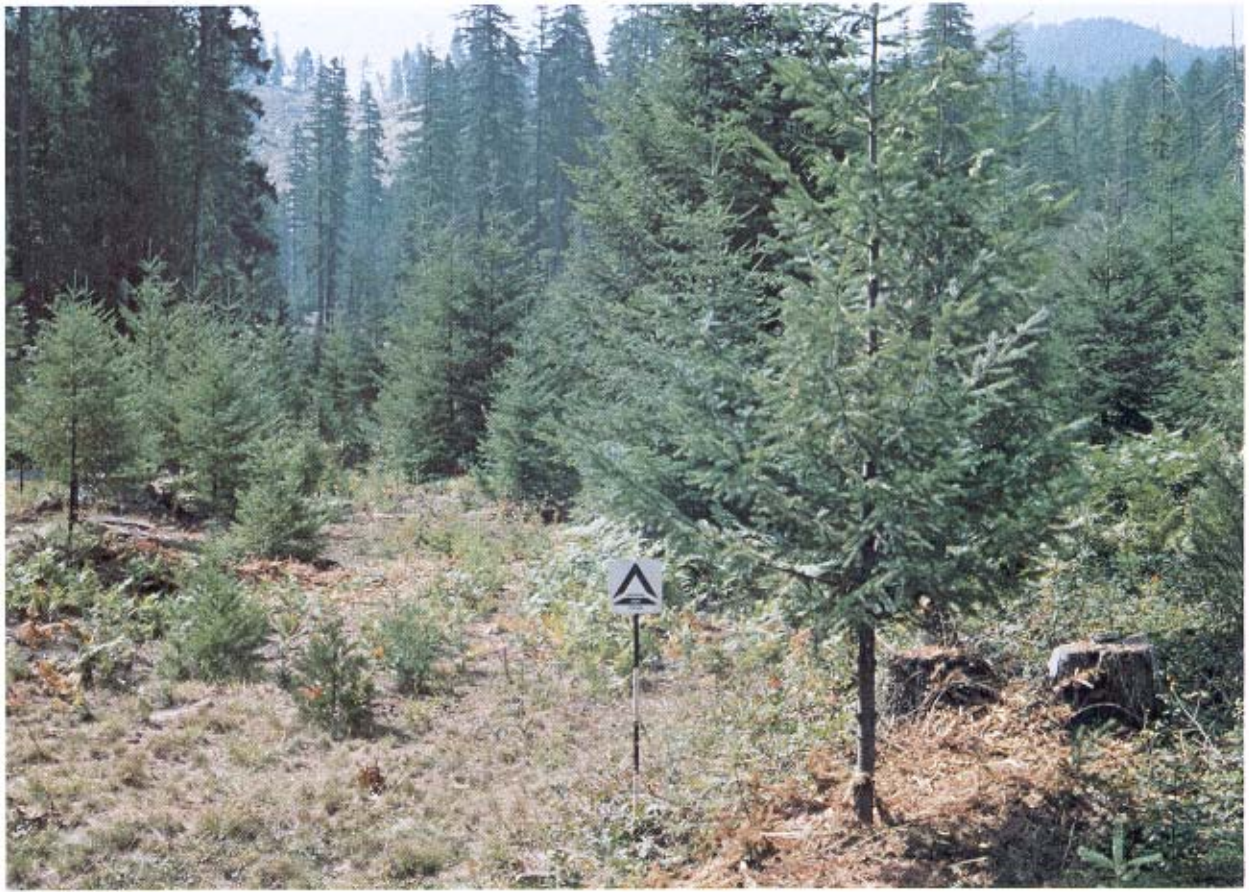
A SERIES OF 4 LEVELS

Reminders to users:

1. The marker in these photos is 1 foot square, and the pole is painted in contrasting colors at 1-foot intervals to provide perspective.

2. Stumps are not included in residue quantities.

3. Rotted residue is that which would come apart or splinter when kicked.



1-DF-1-TH

DATA SHEET Residue descriptive code 1-DF-1-TH

LOADING

Size class (inches)	Weight (tons/acre)		Volume (ft^3/acre)	
0.25-1.0	0.4	0	27	0
1.1-3.0	0.4	0	28	0
3.1-9.0	0	1/ 1.4	0	1/ 117
9.1-20.0	0	1/ 6.0	0	1/ 606
20.1+	0	1/ 10.8	0	1/ 724
Total	0.8	1/ 18.2	55	1/ 1,447

OTHER MEASUREMENTS

Average residue depth		(feet) 0.2
Ground area covered by residue 1/4-inch diameter and larger		(percent) 33
Average duff and litter depth		(inches) 1.3
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 56
	western redcedar	(percent) 14
		(percent)
Rotted residue 3.1-inch diameter and larger		(percent) 30

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) ____
Net volume cruised (M fbm/acre) ____
Average stems/acre cut ____
Average d.b.h. of stems cut (inches) ____
Stand age (years) ____
Cutting prescription ____
Yarding method ____
Slash treatment ____
Period since cut or treatment (months ____

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre 1,547
Stems remaining/acre 700
Basal area/acre before 196
Basal area/acre after 61
Average d.b.h. before (inches) 4
Average d.b.h. after (inches) 4
Thinning method Chainsaw
Slash treatment Chipped

FUEL RATING

U.S. Forest Service Region 6 fuel type identification LL

REMARKS

Residue loadings footnoted were present prior to thinning.

1/

2-DF-1-TH

DATA SHEET Residue descriptive code 2-DF-1-TH

LOADING				
Size class (inches)	Weight (tons/acre)		Volume (ft^3/acre)	
0.25-1.0	0.7	0	41	0
1.1-3.0	0.9	0	57	0
3.1-9.0	0	1/ 2.2	0	1/ 239
9.1-20.0	0	1/ 16.3	0	1/ 1,744
20.1+	0	1/ 75.0	0	1/ 8,015
Total	1.6	1/ 93.5	98	1/ 9,998

OTHER MEASUREMENTS

Average residue depth	(feet)	0.4
Ground area covered by residue 1/4-inch diameter and larger	(percent)	61
Average duff and litter depth	(inches)	1.0
Sound residue 3.1-inch diameter and larger	(percent)	
	(percent)	
	(percent)	
Rotted residue 3.1-inch diameter and larger	(percent)	100

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) ____
Net volume cruised (M fbm/acre) ____
Average stems/acre cut ____
Average d.b.h. of stems cut (inches) ____
Stand age (years) ____
Cutting prescription ____
Yarding method ____
Slash treatment ____
Period since cut or treatment (months ____

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre	1,057
Stems remaining/acre	241
Basal area/acre before	113
Basal area/acre after	47
Average d.b.h. before (inches)	4
Average d.b.h. after (inches)	6
Thinning method	Chainsaw
Slash treatment	Hand piled & burned

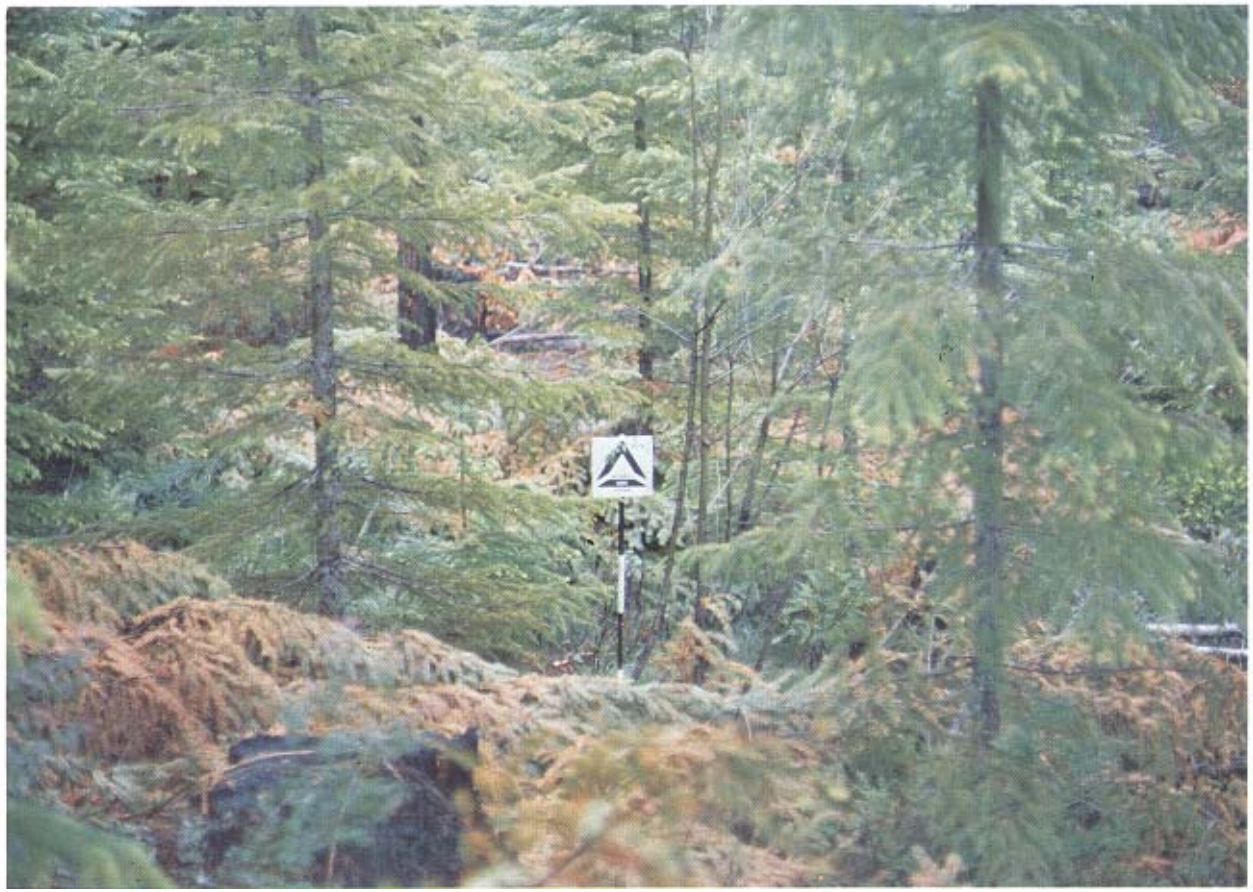
FUEL RATING

U.S. Forest Service Region 6 fuel type identification LH

REMARKS

Residue loadings footnoted were present prior to thinning.

1/ See remarks.



3-DF-1-TH

DATA SHEET Residue descriptive code 3-DF-1-TH

LOADING

Size class (inches)	Weight (tons/acre)		Volume (ft^3/acre)	
0.25-1.0	2.1	0	122	0
1.1-3.0	2.9	0	181	0
3.1-9.0	2.7	1/ 2.9	171	1/ 267
9.1-20.0	0	1/ 10.1	0	1/ 866
20.1+	0	0	0	0
Total	7.7	1/ 13.0	474	1/ 1,133

OTHER MEASUREMENTS

Average residue depth	(feet)	1.0
Ground area covered by residue 1/4-inch diameter and larger	(percent)	69
Average duff and litter depth	(inches)	0.9
Sound residue 3.1-inch diameter and larger Douglas-fir	(percent)	40
chinkapin	(percent)	2
	(percent)	
Rotted residue 3.1-inch diameter and larger	(percent)	58

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) _____
Net volume cruised (M fbm/acre) _____
Average stems/acre cut _____
Average d.b.h. of stems cut (inches) _____
Stand age (years) _____
Cutting prescription _____
Yarding method _____
Slash treatment _____
Period since cut or treatment (months _____

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre	159
Stems remaining/acre	219
Basal area/acre before	52
Basal area/acre after	43
Average d.b.h. before (inches)	5
Average d.b.h. after (inches)	6
Thinning method	Chainsaw
Slash treatment	None

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS

Residue loadings footnoted were present prior to thinning

1/ See remarks.

4-DF-1 -TH

DATA SHEET Residue descriptive code 4-DF-1-TH

LOADING

Size class (inches)	Weight (tons/acre)		Volume (ft^3/acre)	
0.25-1.0	4.1	0	272	0
1.1-3.0	5.3	0	422	0
3.1-9.0	1.6	1/ 14.9	108	1/ 1,072
9.1-20.0	0	1/ 15.5	0	1/ 1,054
20.1+	0	1/ 81.5	0	1/ 5,620
Total	11.0	1/ 111.9	802	1/ 7,746

OTHER MEASUREMENTS

Average residue depth	(feet)	2.3
Ground area covered by residue 1/4-inch diameter and larger	(percent)	93
Average duff and litter depth	(inches)	1.3
Sound residue 3.1-inch diameter and larger Douglas-fir	(percent)	90
western redcedar	(percent)	7
	(percent)	
Rotted residue 3.1-inch diameter and larger	(percent)	3

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) ____
Net volume cruised (M fbm/acre) ____
Average stems/acre cut ____
Average d.b.h. of stems cut (inches) ____
Stand age (years) ____
Cutting prescription ____
Yarding method ____
Slash treatment ____
Period since cut or treatment (months ____

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre	1,058
Stems remaining/acre	317
Basal area/acre before	120
Basal area/acre after	43
Average d.b.h. before (inches)	4
Average d.b.h. after (inches)	5
Thinning method	Chainsaw
Slash treatment	None

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HE

REMARKS

Residue loadings footnoted were present prior to thinning.

1/ See remarks.

DOUGLAS-FIR-HARDWOOD

SIZE CLASS 4

CLEARCUT

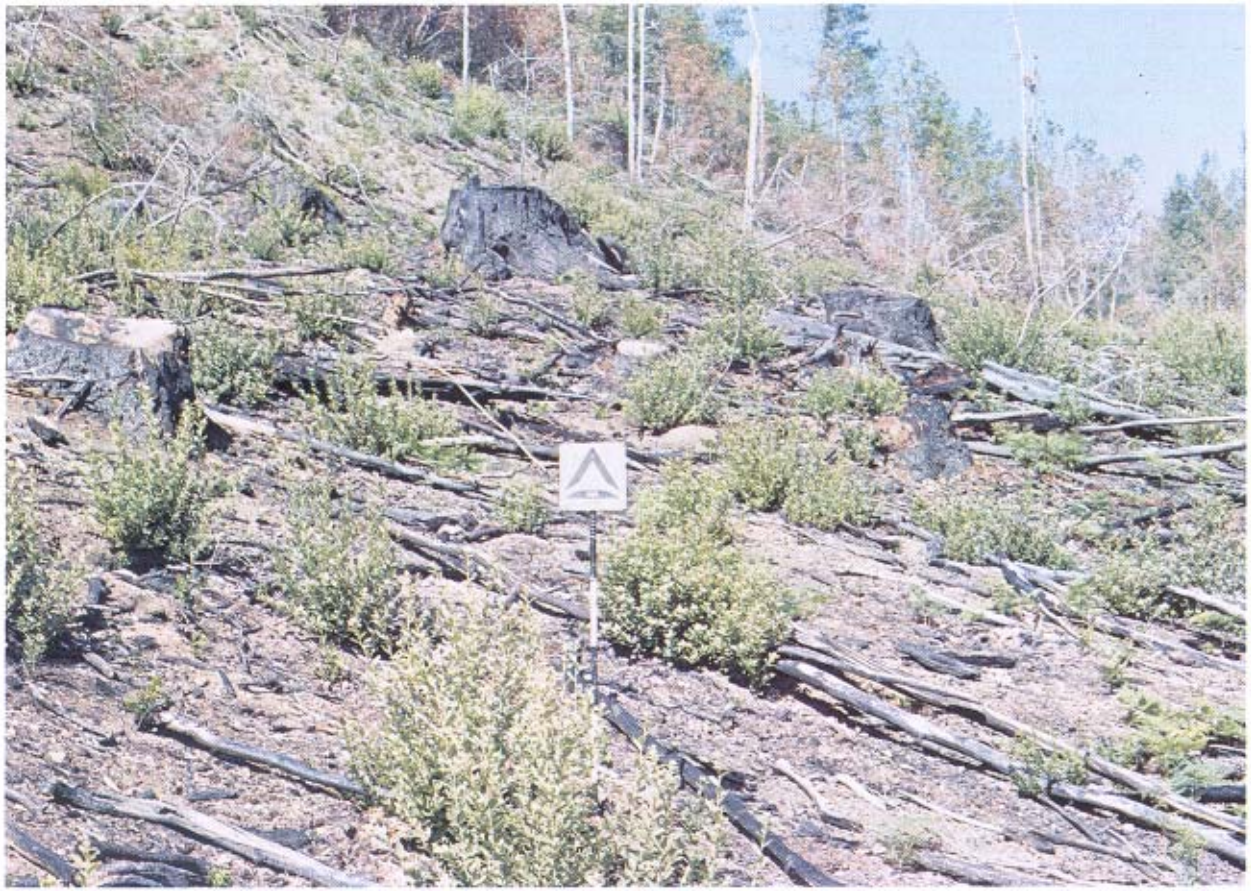
A SERIES OF 7 LEVELS

Reminders to users:

1. The marker in these photos in 1 foot square, and the pole is painted in contrasting colors at 1-foot intervals to provide perspective.

2. Stumps are not included in residue quantities.

3. Potted residue is that which would come apart or splinter when kicked.



1-DFHD-4-CC

DATA SHEET Residue descriptive code 1-DFHD-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.1	70
1.1-3.0	3.1	252
3.1-9.0	3.7	255
9.1-20.0	2.5	235
20.1+	0	0
Total	10.4	812

OTHER MEASUREMENTS

Average residue depth (feet) 0.2

Ground area covered by residue 1/4-inch diameter and larger (percent) 55

Average duff and litter depth (inches) 0

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 32

tanoak (percent) 18

(percent)

Rotted residue 3.1-inch diameter and larger (percent) 50

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 46.4

Net volume cruised (M fbm/acre) 33.3

Average stems/acre cut 30

Average d.b.h. of stems cut (inches) 35

Stand age (years) 250

Cutting prescription Clearcut

Yarding method High-lead

Slash treatment Spring broadcast burn

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification LM

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3C.

2-DFHD-4-CC

DATA SHEET Residue descriptive code 2-DFHD-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.0	132
1.1-3.0	5.1	405
3.1-9.0	8.8	577
9.1-20.0	2.6	176
20.1+	0	0
Total	18.5	1,290

OTHER MEASUREMENTS

Average residue depth (feet) 0.2

Ground area covered by residue 1/4-inch diameter and larger (percent) 61

Average duff and litter depth (inches) 0

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 95

tanoak (percent) 5

(percent)

Rotted residue 3.1-inch diameter and larger (percent) 0

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 40.0

Net volume cruised (M fbm/acre) 35.0

Average stems/acre cut 29

Average d.b.h. of stems cut (inches) 33

Stand age (years) 200

Cutting prescription Clearcut

Yarding method High-lead

Slash treatment Spring broadcast burn

Period since cut or treatment (months) 7

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification MM

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 2C.

3-DFHD-4-CC

DATA SHEET Residue descriptive code 3-DFHD-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.3	85
1.1-3.0	4.0	321
3.1-9.0	16.6	1,037
9.1-20.0	9.6	795
20.1+	6.8	530
Total	38.3	2,768

OTHER MEASUREMENTS

Average residue depth (feet) 0.2

Ground area covered by residue 1/4-inch diameter and larger (percent) 45

Average duff and litter depth (inches) 0

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 50

tanoak (percent) 19

other (percent) 1

Rotted residue 3.1-inch diameter and larger (percent) 30

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 43.3

Net volume cruised (M fbm/acre) 36.7

Average stems/acre cut 29

Average d.b.h. of stems cut (inches) 12

Stand age (years) 200

Cutting prescription Clearcut

Yarding method Slackline

Slash treatment Spring broadcast burn

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification MM

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "
was rated by District Foresters as 3C.

4-DFHD-4-CC

DATA SHEET Residue descriptive code 4-DFHD-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	3.7	244
1.1-3.0	6.3	502
3.1-9.0	15.3	968
9.1-20.0	12.8	828
20.1+	3.6	239
Total	41.7	2,781

OTHER MEASUREMENTS

Average residue depth		(feet) 0.5
Ground area covered by residue 1/4-inch diameter and larger		(percent) 81
Average duff and litter depth		(inches) 0
Sound residue 3.1-inch diameter and larger	Douglas-fir	(percent) 82
	tanoak	(percent) 16
	other	(percent) 1
Rotted residue 3.1-inch diameter and larger		(percent) 1

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 48.8
Net volume cruised (M fbm/acre) 42.3
Average stems/acre cut 37
Average d.b.h. of stems cut (inches) 31
Stand age (years) 200
Cutting prescription Clearcut
Yarding method High-lead
Slash treatment YUM*
Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre
Stems remaining/acre
Basal area/acre before
Basal area/acre after
Average d.b.h. before (inches)
Average d.b.h. after (inches)
Thinning method
Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification MM

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3B.

*Required yarding unmerchantable material (YUM) down to 8 inches, small end and 10 feet in length.

5-DFHD-4-CC

DATA SHEET

Residue descriptive code 5-DFHD-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.7	179
1.1-3.0	4.8	386
3.1-9.0	37.8	2,045
9.1-20.0	24.8	1,233
20.1+	10.9	505
Total	81.0	4,348

OTHER MEASUREMENTS

Average residue depth		(feet)	0.8
Ground area covered by residue 1/4-inch diameter and larger		(percent)	83
Average duff and litter depth		(inches)	0
Sound residue 3.1-inch diameter and larger	tanoak	(percent)	54
	madrone	(percent)	43
	other	(percent)	3
Rotted residue 3.1-inch diameter and larger		(percent)	1

HARVEST INFORMATION

Gross volume cruised (M fbm/acre)	20.5
Net volume cruised (M fbm/acre)	18.4
Average stems/acre cut	119
Average d.b.h. of stems cut (inches)	18
Stand age (years)	200
Cutting prescription	Clearcut
Yarding method	High-lead
Slash treatment	None
Period since cut or treatment (months)	<12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre	
Stems remaining/acre	
Basal area/acre before	
Basal area/acre after	
Average d.b.h. before (inches)	
Average d.b.h. after (inches)	
Thinning method	
Slash treatment	

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3C.

6-DFHD-4-CC

DATA SHEET Residue descriptive code 6-DFHD-4-CC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	5.6	371
1.1-3.0	10.4	833
3.1-9.0	51.6	2,847
9.1-20.0	13.8	793
20.1+	0	0
Total	81.4	4,844

OTHER MEASUREMENTS

Average residue depth (feet) 2.1

Ground area covered by residue 1/4-inch diameter and larger (percent) 97

Average duff and litter depth (inches) 0

Sound residue 3.1-inch diameter and larger tanoak (percent) 75

Douglas-fir (percent) 12

other (percent) 11

Rotted residue 3.1-inch diameter and larger (percent) 2

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 43.5

Net volume cruised (M fbm/acre) 38.2

Average stems/acre cut 34

Average d.b.h. of stems cut (inches) 34

Stand age (years) 200

Cutting prescription Clearcut

Yarding method Slackline

Slash treatment None

Period since cut or treatment (months) 12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification EE

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3C.

7-DFHD-4-CC

DATA SHEET Residue descriptive code 7-DFHD-4-CC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	6.5	435
1.1-3.0	10.5	842
3.1-9.0	77.5	4,083
9.1-20.0	16.3	842
20.1+	0	0
Total	110.8	6,202

OTHER MEASUREMENTS

Average residue depth (feet) 1.9

Ground area covered by residue 1/4-inch diameter and larger (percent) 95

Average duff and litter depth (inches) 0

Sound residue 3.1-inch diameter and larger madrone (percent) 45

tanoak (percent) 39

other (percent) 14

Rotted residue 3.1-inch diameter and larger (percent) 2

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 54.7

Net volume cruised (M fbm/acre) 46.6

Average stems/acre cut 34

Average d.b.h. of stems cut (inches) 31

Stand age (years) 200

Cutting prescription Clearcut

Yarding method Slackline

Slash treatment None

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification EE

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3C.

DOUGLAS-FIR-HARDWOOD

SIZE CLASS 4

PARTIAL CUT

A SERIES OF 6 LEVELS

Reminders to users:

1. The marker in these photos is 1 foot square, and the pole is painted in contrasting colors at 1-foot intervals to provide perspective.

2. Stumps are not included in residue quantities.

3. Rotted residue is that which would come apart or splinter when kicked.

1-DFHD-4-PC

DATA SHEET Residue descriptive code 1-DFHD-4-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	0.7	49
1.1-3.0	3.4	270
3.1-9.0	4.0	227
9.1-20.0	4.2	415
20.1+	0	0
Total	12.3	961

OTHER MEASUREMENTS

Average residue depth (feet) 0.1

Ground area covered by residue 1/4-inch diameter and larger (percent) 40

Average duff and litter depth (inches) 0.1

Sound residue 3.1-inch diameter and larger madrone (percent) 16

Douglas-fir (percent) 11

other (percent) 10

Rotted residue 3.1-inch diameter and larger (percent) 63

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 20.3

Net volume cruised (M fbm/acre) 16.4

Average stems/acre cut 9

Average d.b.h. of stems cut (inches) 38

Stand age (years) 250+

Cutting prescription Overstory removal

Yarding method Rubber-tired skidder

Slash treatment Machine piled

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification LL

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3A.

2-DFHD-4-PC

DATA SHEET Residue descriptive code 2-DFHD-4-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.0	132
1.1-3.0	8.7	693
3.1-9.0	5.1	409
9.1-20.0	2.8	235
20.1+	0	0
Total	18.6	1,469

OTHER MEASUREMENTS

Average residue depth (feet) 0.4

Ground area covered by residue 1/4-inch diameter and larger (percent) 69

Average duff and litter depth (inches) 0.4

Sound residue 3.1-inch diameter and larger western white pine (percent) 57

red fir (percent) 22

other (percent) 19

Rotted residue 3.1-inch diameter and larger (percent) 2

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 48.3

Net volume cruised (M fbm/acre) 37.5

Average stems/acre cut 20

Average d.b.h. of stems cut (inches) 34

Stand age (years) 250

Cutting prescription Shelterwood

Yarding method Skyline

Slash treatment YUM*

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 2A.

*Required yarding unmerchantable material (YUM) down to 8 inches in diameter, small end and 10 feet in length.

3-DFHD-4-PC

DATA SHEET

Residue descriptive code 3-DFHD-4-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	1.7	116
1.1-3.0	8.7	693
3.1-9.0	16.9	1,237
9.1-20.0	8.1	730
20.1+	0	0
Total	35.4	2,776

OTHER MEASUREMENTS

Average residue depth (feet) 0.5

Ground area covered by residue 1/4-inch diameter and larger (percent) 72

Average duff and litter depth (inches) 0.1

Sound residue 3.1-inch diameter and larger white fir (percent) 51

tanoak (percent) 19

other (percent) 5

Rotted residue 3.1-inch diameter and larger (percent) 25

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 35.4

Net volume cruised (M fbm/acre) 24.1

Average stems/acre cut 16

Average d.b.h. of stems cut (inches) 37

Stand age (years) 250+

Cutting prescription Shelterwood

Yarding method High-lead

Slash treatment YUM*

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre _____

Stems remaining/acre _____

Basal area/acre before _____

Basal area/acre after _____

Average d.b.h. before (inches) _____

Average d.b.h. after (inches) _____

Thinning method _____

Slash treatment _____

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HM

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3A .

*Required yarding unmerchantable material (YUM) down to 8 inches in diameter, small end and 10 feet in length.

4-DFHD-4-PC

DATA SHEET Residue descriptive code 4-DFHD-4-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	5.2	345
1.1-3.0	10.7	859
3.1-9.0	12.9	785
9.1-20.0	5.7	340
20.1+	8.0	532
Total	42.5	2,861

OTHER MEASUREMENTS

Average residue depth (feet) 1.3

Ground area covered by residue 1/4-inch diameter and larger (percent) 95

Average duff and litter depth (inches) 1.1

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 78

madrone (percent) 16

other (percent) 4

Rotted residue 3.1-inch diameter and larger (percent) 2

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 37.4

Net volume cruised (M fbm/acre) 29.0

Average stems/acre cut 26

Average d.b.h. of stems cut (inches) 37

Stand age (years) 200+

Cutting prescription Overstory removal

Yarding method Tractor

Slash treatment None

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 3B.

100

5-DFHD-4-PC

DATA SHEET Residue descriptive code 5-DFHD-4-PC

LOADING		
Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	3.0	198
1.1-3.0	8.8	703
3.1-9.0	29.8	1,781
9.1-20.0	5.8	397
20.1+	33.2	2,720
Total	80.6	5,799

OTHER MEASUREMENTS

Average residue depth (feet) 0.5

Ground area covered by residue 1/4-inch diameter and larger (percent) 85

Average duff and litter depth (inches) 1.2

Sound residue 3.1-inch diameter and larger madrone (percent) 25

Douglas-fir (percent) 19

other (percent) 22

Rotted residue 3.1-inch diameter and larger (percent) 34

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 35.2

Net volume cruised (M fbm/acre) 26.6

Average stems/acre cut 62

Average d.b.h. of stems cut (inches) 26

Stand age (years) 150

Cutting prescription Tree selection

Yarding method Mobile yarder

Slash treatment None

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre

Stems remaining/acre

Basal area/acre before

Basal area/acre after

Average d.b.h. before (inches)

Average d.b.h. after (inches)

Thinning method

Slash treatment

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 2C .

6-DFHD-4-PC

DATA SHEET

Residue descriptive code 6-DFHD-4-PC

LOADING

Size class (inches)	Weight (tons/acre)	Volume (ft^3/acre)
0.25-1.0	2.5	166
1.1-3.0	8.7	693
3.1-9.0	14.0	1,055
9.1-20.0	31.4	2,413
20.1+	34.2	2,506
Total	90.8	6,833

OTHER MEASUREMENTS

Average residue depth (feet) 0.6

Ground area covered by residue 1/4-inch diameter and larger (percent) 76

Average duff and litter depth (inches) 0.3

Sound residue 3.1-inch diameter and larger Douglas-fir (percent) 57

Port-Orford-cedar (percent) 18

(percent) ____

Rotted residue 3.1-inch diameter and larger (percent) 25

HARVEST INFORMATION

Gross volume cruised (M fbm/acre) 37.4

Net volume cruised (M fbm/acre) 30.9

Average stems/acre cut 10

Average d.b.h. of stems cut (inches) 45

Stand age (years) 200+

Cutting prescription Overstory removal

Yarding method Tractor

Slash treatment None

Period since cut or treatment (months) <12

PRECOMMERCIAL THINNING INFORMATION

Stems cut/acre ____

Stems remaining/acre ____

Basal area/acre before ____

Basal area/acre after ____

Average d.b.h. before (inches) ____

Average d.b.h. after (inches) ____

Thinning method ____

Slash treatment ____

FUEL RATING

U.S. Forest Service Region 6 fuel type identification HH

REMARKS

Down and dead hardwoods comprise much of the residue in this photo series level. The understory hardwood stand prior to logging, using rating criteria where:

1 = <5 ft in height
2 = 5-15 ft in height
3 = >15 ft in height
and
A = 0-33% understory crown space occupied
B = 34-66% " " " "
C = 67-100% " " " "

was rated by District Foresters as 1A.

The PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT SIAIION is to provide the knowledge, technology and alternatives for present and future protection, management and use of forest, range, and related environments.

Within this overall mission, the Station conducts and Stimulates research to facilitate and to accelerate progress toward the following goals:

1. Providing safe and efficient technology for inventory protection, and use of resources.
2. Developing and evaluating alternative methods and level, of resource management.
3. Achieving optimum sustained resource productivity consistent with maintaining a high quality to test

The area of research c encompasses Oregon, Washington, Alaska, and, 10 some cases, California, Hawaii, the Western States, and the Nation. Results of the research are made available promptly. Project headquarters are made available promptly. Project headquarters are at:

Fairbanks, Alaska	Portland, Oregon
Juneau, Alaska	Olympia, Washington
Bend, Oregon	Seattle, Washington
Corvallis, Oregon	Wenatchee, Washington
La Grande, Oregon	

Mailing addres:. *Pacific Northwest Forest and Range Experiment Station*
P.O. Box 3141
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The FOREST SERVICE of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.

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