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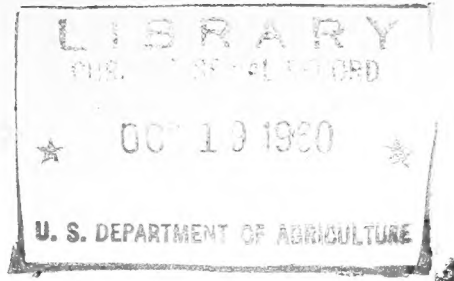
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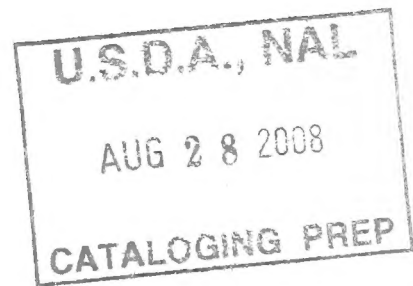


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# SLASH WEIGHT TABLES FOR WESTSIDE MIXED CONIFERS

CRAIG C. CHANDLER



PACIFIC SOUTHWEST  
FOREST AND RANGE  
EXPERIMENT STATION  
BERKELEY - CALIFORNIA



SLASH WEIGHT TABLES  
FOR WESTSIDE MIXED CONIFERS

Craig C. Chandler

CONTENTS

	<u>Page</u>
Introduction - - - - -	1
Tables	
Dry weight of slash	
Ponderosa pine - - - - -	3
Sugar pine - - - - -	6
Douglas-fir - - - - -	10
White fir - - - - -	14
Incense cedar - - - - -	17
Dry weight of cull logs and chunks -	20
Dry weight of slash from thinnings -	21





## SLASH WEIGHT TABLES FOR WESTSIDE MIXED CONIFERS

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The need for, and difficulty of, any slash disposal job depends to a large extent on the quantity and size distribution of slash on the cutover area. Usually the amount of slash is presumed to be proportional to the board-foot volume of timber cut, but this presumption is a very rough approximation because it ignores two important variables: species and size of tree.

This report presents information on quantity and size of slash to be expected from trees of the five predominant species of the Westside mixed-conifer timber type in California. The main segment of information is a set of 18 tables giving the oven-dry weight of slash in three size classes and by tree diameter. Basic data were obtained from the publication and original work notes of Storey, Fons, and Sauer (1955) and from volume tables by Dunning (1945), Hornibrook and Hartong (1942), and Mitchell (1918). For uniformity, tree volumes for all species have been calculated by the Scribner log rule to an 8-inch top diameter, inside bark.

These slash tables are of the "flat factor" type. Like the flat factor cull and breakage factors of Kimmey (1954), values from these tables should be applied to extensive stands and not to individual trees.

Besides collecting the type of cruise data needed to apply cull factors, those who apply these tables must record the length of live crown as a percent of total tree height. However, crown length need not be tallied for each tree; an average for each species and size group in the stand should suffice.

Two other tables present information for cull logs and small trees. Since cull logs may add appreciably to the total amount of slash, a separate table is included for determining the dry weight of cull. Data for this table were obtained from the Forestry Handbook (Forbes, 1955, p. 1.47) and the Wood Handbook (U. S. Forest Service, 1940, pp. 50-53).

The final table lists the total dry weight of small diameter trees. This table is intended for calculating the relative hazard from thinning operations. Data for the table were taken entirely from the field notes of Storey and co-workers.

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<sup>1/</sup> The major computing work for these tables was performed by Robert L. Rennie.

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Dry Weight of Slash:

PONDEROSA PINE

Crown length: 20% of Total Tree Height

D.b.h., in.	: Branches and Tops :		: Needles : 4 in. dia. :		: Total : 4 in. dia. :		: Branches and Tops :		: Total
	Under	Over	Under	Over	Under	Over	Under	Over	
-- Pounds per tree --									
-- Pounds per MBF --									
12	5	15	100	120	105	310	2,080	2,500	
14	10	20	80	110	90	200	810	1,100	
16	10	25	75	110	80	175	510	765	
18	15	35	70	120	75	160	305	540	
20	25	50	70	135	70	150	205	425	
22	30	65	65	160	65	135	135	335	
24	40	85	65	190	60	135	100	295	
26	50	110	60	220	60	130	75	265	
28	60	140	60	260	55	130	55	240	
30	70	175	60	305	50	130	40	220	
32	85	215	55	355	50	125	30	205	
34	100	260	55	415	45	120	25	190	
36	115	315	50	480	45	125	20	190	
38	135	380	50	560	45	125	15	185	
40	155	455	50	660	45	130	10	185	
42	175	540	50	765	45	135	10	190	
44	200	630	50	880	45	140	10	195	
46	225	740	45	1,015	45	140	10	195	
48	250	850	45	1,145	40	145	10	195	
50	280	970	45	1,295	40	145	10	195	
52	310	1,100	45	1,455	45	150	5	200	
54	345	1,250	45	1,640	45	155	5	205	
56	385	1,400	45	1,830	45	160	5	210	
58	425	1,580	40	2,045	45	165	5	215	
60	465	1,770	40	2,275	45	170	5	220	



Dry Weight of Slash: PONDEROSA PINE  
Crown length: 40% of Total Tree Height

D.b.h., in.	: Branches and Tops :		: Needles :		: Total :		: Branches and Tops :		Total
	Under	Over	4 in. dia.	4 in. dia.	4 in. dia.	4 in. dia.	Under	Over	
		: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :	
		: Pounds per tree - -		: Pounds per tree - -		: Pounds per tree - -		: Pounds per MBF - -	
12	15	45	125	185	240	630	1,785	2,655	
14	25	65	105	195	200	510	810	1,520	
16	40	100	90	230	190	500	445	1,135	
18	55	150	80	285	185	515	270	970	
20	75	215	70	360	190	550	180	920	
22	100	305	65	470	185	565	120	870	
24	130	410	60	600	185	590	85	860	
26	165	535	55	755	185	595	60	840	
28	205	700	55	960	180	615	45	840	
30	250	910	50	1,210	175	635	35	845	
32	305	1,140	50	1,495	175	650	30	855	
34	365	1,420	55	1,840	175	680	25	880	
36	430	1,720	60	2,210	175	690	25	890	
38	510	2,060	70	2,640	175	700	25	900	
40	595	2,420	95	3,110	180	715	30	925	
42	680	2,790	190	3,660	180	725	50	955	
44	785	3,170	315	4,270	180	730	75	985	
46	900	3,550	500	4,950	180	725	100	1,005	
48	1,020	3,960	800	5,780	180	715	145	1,040	
50	1,140	4,380	1,170	6,690	180	700	185	1,065	
52	1,290	4,800	1,650	7,740	180	670	230	1,080	
54	1,440	5,230	2,170	8,840	185	680	280	1,145	
56	1,610	5,650	2,770	10,030	190	680	330	1,200	
58	1,790	6,100	3,470	11,360	195	670	380	1,245	
60	1,990	6,450	4,230	12,670	195	650	415	1,260	

Dry Weight of Slash: PONDEROSA PINE

Crown length: 50% of Total Tree Height

D.b.h., in.	: Branches and Tops :		: Needles :		Total :	: Branches and Tops :		Total :	
	Under	Over	4 in. dia.	4 in. dia.		Under	Over		
		: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :	
		: Pounds per tree - -		: Pounds per tree - -		: Pounds per MBF - -		: Pounds per MBF - -	
12	30	75	110	215	430	1,070	1,570	3,070	
14	55	125	90	270	390	890	650	1,940	
16	70	210	80	360	340	1,000	370	1,710	
18	100	320	70	490	345	1,060	225	1,630	
20	140	450	65	655	350	1,120	160	1,640	
22	185	640	60	885	350	1,210	110	1,670	
24	240	860	55	1,155	350	1,270	80	1,700	
26	300	1,130	55	1,485	350	1,300	60	1,720	
28	375	1,480	55	1,910	350	1,360	50	1,760	
30	460	1,890	60	2,410	350	1,400	50	1,800	
32	560	2,330	120	3,010	350	1,420	70	1,840	
34	675	2,750	265	3,690	350	1,430	130	1,910	
36	800	3,180	490	4,470	350	1,400	210	1,970	
38	930	3,620	820	5,370	355	1,380	305	2,040	
40	1,090	4,100	1,240	6,430	360	1,350	410	2,120	
42	1,260	4,600	1,780	7,640	365	1,320	515	2,200	
44	1,450	5,010	2,480	8,940	370	1,290	620	2,280	
46	1,670	5,520	3,310	10,500	375	1,250	735	2,360	
48	1,910	6,030	4,290	12,230	380	1,210	860	2,450	
50	2,150	6,540	5,380	14,070	385	1,180	975	2,540	
52	2,420	7,070	6,610	16,100	390	1,140	1,080	2,610	
54	2,700	7,600	8,050	18,350	395	1,100	1,185	2,680	
56	3,000	8,170	9,700	20,870	400	1,070	1,280	2,750	
58	3,330	8,740	11,500	23,570	405	1,040	1,375	2,820	
60	3,680	9,300	13,400	26,380	410	1,020	1,470	2,900	

Dry Weight of Slash: PONDEROSA PINE

Crown length: 80% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia. : Total	Needles : 4 in. dia. : Total	Branches and Tops		Pounds per MBF
	Under	Over			Under	Over	
12	60	160	65	285	2,000	5,330	2,230
14	80	220	65	365	1,000	2,750	800
16	110	330	60	500	785	2,360	435
18	150	480	60	690	680	2,180	260
20	200	700	55	955	620	2,190	170
22	260	970	55	1,285	590	2,200	120
24	340	1,320	50	1,710	580	2,240	90
26	430	1,730	60	2,220	570	2,290	80
28	540	2,160	150	2,850	550	2,250	190
30	660	2,600	360	3,620	540	2,190	320
32	800	3,070	700	4,570	530	2,120	480
34	960	3,540	1,150	5,650	530	2,040	570
36	1,140	4,050	1,720	6,910	545	1,970	855
38	1,350	4,560	2,430	8,340	560	1,910	1,040
40	1,580	5,100	3,300	9,980	580	1,860	1,220
42	1,830	5,640	4,320	11,790	595	1,815	1,410
44	2,100	6,200	5,700	14,000	610	1,780	1,600
46	2,420	6,730	7,200	16,350	630	1,750	1,790
48	2,780	7,300	8,980	19,060	645	1,720	1,995
50	3,170	7,950	10,800	21,920	660	1,695	2,215
52	3,600	8,610	13,000	25,210	680	1,670	2,440
54	4,040	9,380	15,600	29,020	695	1,650	2,675
56	4,500	10,100	18,300	32,900	710	1,630	2,920
58	4,910	10,900	21,200	37,010	725	1,615	3,170
60	5,270	11,900	24,400	41,170	740	1,600	3,430

Dry Weight of Slash: SUGAR PINE  
 Crown Length: 20% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia.	Total : Pounds per tree	Branches and Tops		Needles : 4 in. dia.	Total : Pounds per MBF
	Under	Over			Under	Over		
12	5	15	100	120	100	340	1,980	2,420
14	5	20	80	105	85	215	910	1,210
16	10	25	70	105	80	170	495	745
18	15	35	65	115	70	150	315	535
20	20	40	60	120	60	135	215	410
22	20	50	55	125	55	120	145	320
24	25	60	55	140	50	110	100	260
26	30	70	50	150	45	100	75	220
28	40	85	50	175	40	95	55	190
30	45	105	50	200	40	95	45	180
32	55	125	50	230	35	90	40	165
34	60	150	50	260	35	85	30	150
36	70	175	50	295	35	85	25	145
38	80	200	50	330	30	80	20	130
40	90	230	50	370	30	80	20	130
42	100	265	50	415	30	80	15	125
44	115	305	50	470	30	80	10	120
46	130	350	50	530	30	80	10	120
48	145	395	50	590	30	80	10	120
50	160	450	45	655	30	80	10	120
52	175	505	45	725	30	80	10	120
54	195	570	45	810	30	85	5	120
56	215	640	45	900	30	85	5	120
58	235	720	40	995	30	90	5	125
60	260	805	40	1,110	30	90	5	125



Dry Weight of Slash:

SUGAR PINE

Crown length: 40% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia.	Total : Pounds per tree	Branches and Tops		Needles : 4 in. dia.	Total : Pounds per MBF
	Under : 4 in. dia.	Over : 4 in. dia.			Under : 4 in. dia.	Over : 4 in. dia.		
12	15	40	100	155	300	740	1,980	3,020
14	25	50	80	155	260	610	910	1,780
16	30	75	70	175	230	540	495	1,260
18	40	100	65	205	200	490	315	1,000
20	55	130	60	245	180	450	215	845
22	65	165	55	285	160	415	145	720
24	80	210	55	345	145	385	100	630
26	95	255	50	400	130	365	75	570
28	110	315	50	475	120	355	55	530
30	130	380	50	560	110	330	45	485
32	150	460	50	660	105	325	40	470
34	175	550	50	775	100	320	30	450
36	200	645	50	895	95	315	25	435
38	230	765	50	1,040	90	310	20	420
40	260	885	50	1,200	90	310	20	420
42	295	1,020	50	1,360	85	305	15	405
44	245	1,170	50	1,460	85	305	10	400
46	370	1,330	50	1,750	85	305	10	400
48	415	1,500	50	1,965	85	305	10	400
50	460	1,690	50	2,200	85	305	10	395
52	515	1,880	55	2,450	85	310	10	400
54	565	2,090	85	2,740	85	310	10	405
56	625	2,300	130	3,060	85	310	20	415
58	690	2,520	200	3,410	85	310	25	420
60	760	2,720	355	3,840	85	310	40	435

Dry Weight of Slash: SUGAR PINE  
Crown length: 50% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia.	Total : 4 in. dia.	Branches and Tops		Needles : 4 in. dia.	Total : 4 in. dia.	Branches and Tops		Total
	Under	Over			Under	Over			Under	Over	
12	20	55	100	175	420	1,080	1,980	3,480			
14	30	75	80	185	370	925	910	2,200			
16	45	115	70	230	330	840	495	1,660			
18	60	155	65	280	290	780	315	1,380			
20	80	210	60	350	260	725	215	1,200			
22	95	275	55	425	230	675	145	1,050			
24	115	345	55	515	210	630	100	940			
26	140	435	50	625	190	595	75	860			
28	155	525	50	730	180	570	55	805			
30	195	635	50	880	170	555	45	770			
32	225	760	50	1,040	160	545	40	745			
34	260	900	50	1,210	150	535	30	715			
36	300	1,060	50	1,410	145	530	25	700			
38	340	1,240	50	1,630	140	520	20	680			
40	385	1,450	55	1,890	135	505	20	660			
42	435	1,640	80	2,150	130	495	20	645			
44	490	1,830	130	2,450	130	480	35	645			
46	550	2,060	220	2,770	125	460	50	635			
48	610	2,170	360	3,140	125	440	70	635			
50	680	2,330	520	3,530	120	420	90	630			
52	750	2,480	715	3,940	120	405	110	635			
54	820	2,640	940	4,400	120	390	135	645			
56	910	2,790	1,210	4,910	120	375	160	655			
58	1,000	2,980	1,550	5,530	120	360	190	670			
60	1,090	3,060	1,900	6,050	125	350	215	690			

Dry Weight of Slash:

SUGAR PINE

Crown length: 80% of Total Tree Height

D.b.h., in.	: Branches and Tops :		: Needles :	: Total :	: Branches and Tops :		: Total :	
	Under	Over			Under	Over		
	: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :	
	Pounds per tree		Pounds per tree		Pounds per MBF		Pounds per MBF	
12	25	70	100	195	520	1,360	1,980	3,860
14	40	105	80	225	455	1,210	910	2,580
16	55	155	70	280	405	1,110	495	2,010
18	75	215	65	355	365	1,030	315	1,710
20	95	285	60	440	325	965	215	1,500
22	120	375	60	555	295	905	145	1,340
24	145	465	55	665	265	855	100	1,220
26	175	575	55	805	240	815	75	1,130
28	205	700	50	955	225	775	55	1,060
30	240	845	50	1,140	210	740	45	995
32	280	1,010	50	1,340	200	705	40	945
34	320	1,200	60	1,580	185	675	40	900
36	365	1,380	75	1,820	175	640	50	865
38	410	1,540	105	2,060	170	605	60	835
40	465	1,700	165	2,330	165	575	80	820
42	520	1,850	330	2,700	160	545	110	815
44	585	2,000	540	3,120	160	515	140	815
46	655	2,130	760	3,540	155	490	170	815
48	730	2,270	1,010	4,010	150	460	200	810
50	810	2,400	1,300	4,510	150	435	235	820
52	905	2,540	1,630	5,080	150	415	265	830
54	1,000	2,670	2,000	5,670	150	395	300	845
56	1,110	2,800	2,460	6,370	155	375	330	860
58	1,230	2,940	2,940	7,110	155	365	360	880
60	1,350	3,090	3,480	7,920	155	355	395	905

Dry Weight of Slash: DOUGLAS-FIR  
 Crown length: 20% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia.	Total	Branches and Tops		Needles : 4 in. dia.	Total	Pounds per MBF	
	Under	Over			Under	Over			Under	Over
12	25	85	10	120	550	1,200	4,200	5,950	1,200	4,200
14	30	80	15	125	345	475	2,300	2,120	475	2,300
16	40	75	20	135	155	275	450	880	275	450
18	55	70	30	155	125	240	280	645	240	280
20	70	70	35	175	110	220	200	530	220	200
22	95	65	45	205	105	210	155	470	210	155
24	120	65	50	235	100	200	120	420	200	120
26	145	60	60	265	90	190	90	375	190	90
28	170	60	70	300	85	190	75	350	190	75
30	200	60	85	345	80	185	60	325	185	60
32	240	55	100	395	75	185	45	305	185	45
34	285	55	115	455	75	185	35	295	185	35
36	340	55	130	525	70	185	30	285	185	30
38	400	50	145	595	70	190	25	285	190	25
40	475	50	165	690	70	190	20	280	190	20
42	560	50	190	800	70	195	20	280	195	20
44	650	50	215	915	65	200	15	285	200	15
46	745	50	245	1,040	65	205	15	285	205	15
48	850	50	275	1,170	65	210	10	290	210	10
50	965	45	305	1,320	65	215	10	290	215	10
52	1,090	45	340	1,480	70	220	10	295	220	10
54	1,230	45	375	1,650	70	230	10	305	230	10
56	1,380	45	415	1,840	70	235	5	310	235	5
58	1,540	45	450	2,030	70	240	5	315	240	5
60	1,720	45	490	2,250	70	250	5	330	250	5

Dry Weight of Slash:

DOUGLAS-FIR

Crown length: 40% of Total Tree Height

D.b.h., in.	Needles		4 in. dia.		Branches and Tops		4 in. dia.		Needles		4 in. dia.		Branches and Tops		Total
	Needles	4 in. dia.	Under	Over	Under	Over	Under	Over	Needles	4 in. dia.	Under	Over	Needles	4 in. dia.	
-- Pounds per tree --															
12	35	70	85	190	1,700	3,700	4,200	9,600							
14	40	95	80	215	1,120	2,350	2,300	5,770							
16	55	140	75	270	430	960	450	1,840							
18	75	200	70	345	350	880	280	1,510							
20	100	280	70	450	315	840	200	1,360							
22	125	355	65	545	290	810	155	1,260							
24	150	440	65	655	270	785	120	1,180							
26	180	550	60	790	255	765	90	1,120							
28	210	670	60	940	240	750	75	1,060							
30	245	800	60	1,100	230	740	60	1,030							
32	285	950	55	1,290	220	730	45	1,000							
34	330	1,130	55	1,510	215	735	35	985							
36	380	1,350	55	1,780	210	740	30	980							
38	435	1,600	50	2,090	205	745	25	975							
40	500	1,880	50	2,430	205	760	20	985							
42	570	2,180	50	2,800	200	775	20	995							
44	640	2,520	50	3,210	200	790	15	1,010							
46	720	2,890	50	3,660	200	805	15	1,020							
48	800	3,320	50	4,170	200	825	10	1,040							
50	890	3,780	45	4,720	200	845	10	1,060							
52	985	4,270	45	5,300	200	865	10	1,070							
54	1,090	4,800	45	5,940	200	890	10	1,100							
56	1,200	5,390	45	6,640	200	915	5	1,120							
58	1,320	6,020	45	7,380	200	940	5	1,150							
60	1,450	6,580	45	8,170	205	965	5	1,170							

Dry Weight of Slash: DOUGLAS-FIR

Crown length: 60% of Total Tree Height

D.b.h., in.	: Branches and Tops :		: Needles :	: Total :	: 4 in. dia. :	: Branches and Tops :		: 4 in. dia. :	: Total :
	: Under :	: Over :				: Under :	: Over :		
		: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :		: 4 in. dia. :	
		: Pounds per tree - - :		: Pounds per tree - - :		: Pounds per MBF - - :		: Pounds per MBF - - :	
12	55	100	85	240	2,800	5,250	4,200	12,200	
14	70	175	80	325	1,770	3,400	2,300	7,470	
16	90	250	75	415	670	1,630	450	2,150	
18	120	350	70	540	530	1,470	280	2,280	
20	150	460	70	680	480	1,400	200	2,080	
22	180	580	65	825	435	1,360	155	1,950	
24	220	730	65	1,010	405	1,320	120	1,840	
26	260	900	60	1,220	375	1,290	90	1,760	
28	310	1,100	60	1,470	350	1,260	75	1,680	
30	360	1,320	60	1,740	330	1,240	60	1,630	
32	415	1,580	55	2,050	315	1,220	45	1,580	
34	475	1,880	55	2,410	300	1,210	35	1,550	
36	545	2,220	55	2,820	295	1,200	30	1,520	
38	625	2,610	50	3,290	290	1,210	25	1,520	
40	710	3,060	50	3,820	285	1,230	20	1,540	
42	810	3,570	50	4,430	285	1,250	20	1,550	
44	920	4,120	50	5,090	285	1,280	15	1,580	
46	1,040	4,760	50	5,850	285	1,310	15	1,610	
48	1,170	5,430	50	6,650	285	1,340	10	1,640	
50	1,300	6,180	45	7,530	285	1,370	10	1,660	
52	1,430	6,960	45	8,440	290	1,410	10	1,710	
54	1,570	7,840	50	9,460	295	1,450	10	1,750	
56	1,730	8,800	50	10,600	295	1,490	5	1,790	
58	1,900	9,800	50	11,700	300	1,530	5	1,840	
60	2,080	10,900	50	13,000	300	1,570	5	1,880	

Dry Weight of Slash: DOUGLAS-FIR  
 Crown length: 80% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles	4 in. dia.	Total	Needles	4 in. dia.	Branches and Tops		Total
	Under	Over						Under	Over	
Pounds per tree										
Pounds per MBF										
12	60	150	85	295	3,050	7,750	4,200	15,000		
14	85	210	80	375	1,900	4,750	2,300	8,950		
16	115	325	75	515	765	2,310	450	3,520		
18	150	440	70	660	635	2,030	280	2,940		
20	185	610	70	865	575	1,890	200	2,660		
22	225	790	65	1,080	530	1,800	155	2,490		
24	275	990	65	1,330	505	1,740	120	2,360		
26	325	1,220	60	1,610	465	1,690	90	2,250		
28	380	1,480	60	1,920	435	1,560	75	2,170		
30	440	1,770	60	2,270	410	1,630	50	2,100		
32	505	2,100	55	2,660	390	1,620	45	2,060		
34	580	2,500	55	3,130	370	1,610	35	2,020		
36	665	2,960	55	3,680	360	1,600	30	1,990		
38	770	3,500	50	4,320	360	1,610	25	2,000		
40	880	4,120	50	5,050	355	1,620	20	2,000		
42	995	4,780	50	5,820	350	1,640	20	2,010		
44	1,120	5,490	50	6,660	350	1,680	15	2,050		
46	1,260	6,320	50	7,630	345	1,730	15	2,090		
48	1,400	7,200	50	8,650	345	1,790	10	2,150		
50	1,560	8,190	45	9,800	350	1,840	10	2,200		
52	1,740	9,150	150	11,000	355	1,870	30	2,260		
54	1,920	10,000	480	12,400	360	1,870	90	2,320		
56	2,120	11,800	960	13,900	360	1,840	160	2,360		
58	2,330	10,600	1,580	15,500	365	1,810	250	2,420		
60	2,560	12,200	2,460	17,200	370	1,760	355	2,480		

Dry Weight of Slash: WHITE FIR

Crown length: 40% of Total Tree Height

D.b.h., in.	Branches and Tops		4 in. dia. Pounds per tree	Total	Needles	Branches and Tops		4 in. dia. Pounds per MBF	Total
	Under	Over				Under	Over		
12	59	65	65	180	1,060	1,260	1,260	1,260	3,580
14	50	60	55	205	530	900	735	900	2,260
16	75	105	70	250	470	655	430	655	1,560
18	95	140	70	305	395	570	270	570	1,240
20	120	155	55	370	345	515	190	515	1,050
22	150	235	55	450	305	475	130	475	910
24	135	300	60	545	285	450	90	450	825
26	225	370	50	660	270	440	70	440	780
28	260	465	55	800	265	440	55	440	760
30	330	570	55	955	260	445	45	445	750
32	390	690	55	1,130	200	455	35	455	750
34	425	825	50	1,340	250	455	30	455	755
36	545	990	50	1,580	250	475	25	475	760
38	530	1,130	50	1,860	260	490	20	490	770
40	720	1,390	50	2,160	255	505	20	505	790
42	625	1,530	45	2,500	255	520	15	520	800
44	730	1,690	45	2,800	270	540	15	540	825
46	1,000	2,200	45	3,300	275	555	10	555	840
48	1,200	2,520	45	3,700	275	575	10	575	860
50	1,350	2,870	45	4,200	280	595	10	595	885
52	1,510	3,240	40	4,790	285	615	10	615	910
54	1,590	3,570	40	5,400	290	635	5	635	930
56	1,880	4,140	40	6,000	295	655	5	655	955
58	2,000	4,530	40	6,780	300	675	5	675	980
60	2,300	5,200	40	7,540	310	700	5	700	1,010



Dry Weight of Slash: WHITE FIR  
 Crown length: 60% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia. : Pounds per tree	Total : 4 in. dia. : Pounds per MBF	Branches and Tops		Total : 4 in. dia. : Pounds per MBF
	Under	Over			Under	Over	
12	100	65	80	240	1,520	2,000	1,260
14	115	65	90	270	1,060	1,470	735
16	150	70	110	330	690	1,010	430
18	215	70	140	415	585	920	270
20	300	65	180	545	515	845	190
22	395	65	225	685	465	790	130
24	500	60	280	840	430	750	90
26	630	60	345	1,030	405	735	70
28	780	55	415	1,250	390	735	55
30	960	55	500	1,520	390	750	45
32	1,170	55	595	1,820	390	770	35
34	1,400	50	700	2,150	395	790	30
36	1,670	50	810	2,530	395	810	25
38	1,980	50	940	2,970	400	830	20
40	2,330	50	1,080	3,460	400	855	20
42	2,720	45	1,230	4,000	405	885	15
44	3,130	45	1,400	4,580	410	910	15
46	3,630	45	1,600	5,270	415	940	10
48	4,180	45	1,810	6,030	420	970	10
50	4,800	45	2,040	6,880	425	1,000	10
52	5,420	40	2,280	7,740	430	1,030	10
54	6,130	40	2,540	8,710	440	1,070	5
56	6,910	40	2,820	9,770	445	1,100	5
58	7,700	50	3,110	10,900	450	1,130	10
60	8,570	60	3,410	12,000	460	1,160	10

Dry Weight of Slash:

WHITE FIR

Crown length: 80% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia. : Pounds per tree	Total : 4 in. dia. : Pounds per tree	Branches and Tops		Needles : 4 in. dia. : Pounds per MBF	Total
	Under	Over			Under	Over		
12	140	65	95	300	1,920	2,700	1,260	5,880
14	160	65	165	330	1,300	1,930	735	3,960
16	210	70	130	410	850	1,380	430	2,660
18	290	70	165	525	730	1,230	270	2,230
20	390	65	215	670	655	1,140	190	1,980
22	510	65	275	850	590	1,070	130	1,790
24	670	60	355	1,090	540	1,020	90	1,650
26	800	60	440	1,300	520	1,000	70	1,590
28	1,040	55	530	1,630	505	1,000	55	1,560
30	1,300	55	635	1,990	495	1,010	45	1,550
32	1,580	55	750	2,380	495	1,030	35	1,560
34	1,900	50	890	2,840	495	1,050	30	1,570
36	2,270	50	1,030	3,350	500	1,080	25	1,600
38	2,670	50	1,190	3,910	500	1,110	20	1,630
40	3,140	50	1,370	4,560	505	1,150	20	1,670
42	3,650	45	1,560	5,260	510	1,190	15	1,710
44	4,240	45	1,770	6,060	515	1,230	15	1,760
46	4,900	45	2,020	6,960	520	1,280	10	1,810
48	5,650	45	2,300	7,990	530	1,320	10	1,860
50	6,450	60	2,630	9,140	540	1,350	15	1,900
52	7,250	130	2,890	10,300	550	1,370	25	1,940
54	8,000	390	3,230	11,600	550	1,380	70	2,010
56	8,660	770	3,490	12,900	570	1,370	125	2,060
58	9,200	1,280	3,950	14,400	580	1,350	190	2,120
60	9,640	2,000	4,340	16,000	590	1,300	270	2,160

Dry Weight of Slash: INCENSE CEDAR

Crown length: 40% of Total Tree Height

D.b.h., in.	Branches and Tops		Needles : 4 in. dia.	Total : 4 in. dia.	Needles : 4 in. dia.	Branches and Tops		Total
	Under	Over				Under	Over	
12	10	15	80	105	450	850	4,050	5,350
14	10	20	85	115	315	490	2,100	2,900
16	15	25	85	125	250	355	1,280	1,880
18	20	30	90	140	200	270	840	1,310
20	30	35	90	155	170	215	520	905
22	35	45	90	170	155	195	375	725
24	45	55	85	185	145	185	290	620
26	55	70	85	210	135	175	220	530
28	65	85	85	235	130	170	165	465
30	75	100	80	255	120	165	130	415
32	90	120	80	290	120	165	105	390
34	105	140	75	320	115	160	85	360
36	120	165	75	360	110	160	75	345
38	135	195	75	405	110	160	60	330
40	155	230	70	455	110	160	50	320
42	175	265	70	510	110	165	45	320
44	200	305	70	575	110	170	40	320
46	225	350	70	645	110	170	30	310
48	255	400	65	720	110	175	30	315
50	285	455	65	805	110	180	25	315
52	315	515	65	895	115	185	20	320
54	350	580	65	995	115	190	20	325
56	385	655	60	1,100	115	195	20	330
58	420	730	60	1,210	120	205	15	340
60	465	815	60	1,340	120	210	15	345

Dry Weight of Slash:

INCENSE CEDAR  
Crown length.

60% of Total Tree Height

D.b.h., in.	Needles		4 in. dia.		4 in. dia.		4 in. dia.		4 in. dia.		Total		Needles		4 in. dia.		4 in. dia.		Total	
	in.	Needles	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over	Under	Over
12	25	30	80	135	1,200	1,550	4,050	6,800	1,550	1,090	825	1,280	2,000	1,600	520	1,310	1,160	1,060	975	920
14	30	40	85	155	795	1,090	2,100	3,980	1,090	825	1,280	2,000	1,600	520	1,310	1,160	1,060	975	920	
16	40	55	85	180	615	825	1,280	2,720	825	665	820	2,000	1,600	520	1,310	1,160	1,060	975	920	
18	55	75	90	220	515	665	820	2,000	665	575	520	1,600	1,600	520	1,310	1,160	1,060	975	920	
20	70	95	90	255	500	575	520	1,600	575	520	520	1,600	1,600	520	1,310	1,160	1,060	975	920	
22	90	125	90	305	405	530	375	1,310	530	505	290	1,160	1,160	290	1,060	975	920	920	920	
24	110	155	85	350	370	505	290	1,160	505	490	220	1,060	1,060	165	975	920	920	920	920	
26	135	195	85	415	345	485	165	975	485	480	130	920	920	105	885	865	855	840	840	
28	160	245	85	490	325	485	165	975	485	490	75	855	855	60	840	840	840	840	840	
30	190	300	80	570	310	480	130	920	480	505	50	840	840	50	840	840	840	840	840	
32	225	370	80	675	300	480	105	885	480	485	85	865	865	85	865	865	865	865	865	
34	265	455	75	795	295	485	85	865	485	490	75	855	855	75	855	855	855	855	855	
36	305	525	75	905	290	490	75	855	490	495	60	840	840	60	840	840	840	840	840	
38	355	620	75	1,050	285	495	60	840	495	505	50	840	840	50	840	840	840	840	840	
40	405	725	70	1,200	285	505	50	840	505	515	45	845	845	45	845	845	845	845	845	
42	460	850	70	1,380	285	515	45	845	515	530	40	855	855	40	855	855	855	855	855	
44	525	985	70	1,580	285	530	40	855	530	550	30	865	865	30	865	865	865	865	865	
46	590	1,130	70	1,790	285	550	30	865	550	565	30	885	885	30	885	885	885	885	885	
48	665	1,300	65	2,030	290	565	30	885	565	585	25	905	905	25	905	905	905	905	905	
50	740	1,500	65	2,300	295	585	25	905	585	605	20	920	920	20	920	920	920	920	920	
52	825	1,690	65	2,580	295	605	20	920	605	625	20	945	945	20	945	945	945	945	945	
54	915	1,910	65	2,890	300	625	20	945	625	645	20	970	970	20	970	970	970	970	970	
56	1,010	2,140	60	3,210	305	645	20	970	645	665	15	985	985	15	985	985	985	985	985	
58	1,110	2,380	60	3,550	305	665	15	985	665	690	15	1,020	1,020	15	1,020	1,020	1,020	1,020	1,020	
60	1,220	2,630	65	3,920	310	690	15	1,020	690											

Dry Weight of Slash: INCENSE CEDAR

Crown length: 80% of Total Tree Height

D.b.h., in.	Needles		4 in. dia.		Branches and Tops		4 in. dia.		Needles		Branches and Tops		Total
	4 in. dia.	Over	4 in. dia.	Over	4 in. dia.	Over	4 in. dia.	Over	4 in. dia.	Over	4 in. dia.	Over	
Pounds per tree													
Pounds per MBF													
12	45	55	80	180	2,200	2,800	4,050	9,050					
14	55	75	85	215	1,490	2,010	2,100	5,600					
16	75	105	85	265	1,160	1,620	1,280	4,060					
18	100	150	90	340	940	1,360	820	3,120					
20	130	200	90	420	790	1,170	520	2,480					
22	165	260	90	515	720	1,110	375	2,200					
24	200	330	85	615	670	1,080	290	2,040					
26	245	415	85	745	635	1,060	220	1,920					
28	295	515	85	895	610	1,040	165	1,820					
30	350	630	80	1,060	585	1,030	130	1,740					
32	420	770	80	1,270	570	1,020	105	1,700					
34	485	920	75	1,480	550	1,030	85	1,670					
36	565	1,100	75	1,740	540	1,040	75	1,650					
38	650	1,300	75	2,020	530	1,050	60	1,640					
40	745	1,530	70	2,350	530	1,070	50	1,650					
42	845	1,800	70	2,720	525	1,100	45	1,670					
44	950	2,060	70	3,080	525	1,120	40	1,680					
46	1,080	2,350	95	3,530	530	1,140	45	1,710					
48	1,200	2,630	155	3,980	530	1,150	65	1,750					
50	1,350	2,910	255	4,520	535	1,150	105	1,790					
52	1,500	3,160	410	5,070	540	1,140	155	1,840					
54	1,680	3,400	620	5,700	545	1,120	210	1,880					
56	1,850	3,630	880	6,360	550	1,100	265	1,920					
58	2,020	3,840	1,170	7,030	560	1,070	320	1,950					
60	2,200	4,030	1,510	7,740	570	1,030	385	1,990					

DRY WEIGHT OF CULL LOGS AND CHUNKS

Diameter at small end, in.	:	Douglas- fir	:	Ponderosa pine	:	Sugar pine, white fir, incense-cedar
<hr/>						
Pounds per MBF cull <sup>1/</sup>						
12-18		3,500		3,120		2,730
20-28		3,280		2,920		2,550
30-38		3,080		2,740		2,400
40-48		2,940		2,620		2,290
50-58		2,800		2,500		2,180
60-68		2,660		2,370		2,070

<sup>1/</sup> Volume of cull in board feet may be obtained either from published cull factors or by subtracting net volume from gross volume in original cruise data.

Dry Weight of Slash from Thinnings

	Ponderosa Pine		Incense-cedar		White Fir						
	Dominants and at 6 in. height, inches	Intermediates and codominants : Under 4 : Over 4 : : in. dia.: in. dia.: Total:	Dominants and at 6 in. height, inches	Intermediates and codominants : Under 4 : Over 4 : : in. dia.: in. dia.: Total:	Dominants and at 6 in. height, inches	Intermediates and codominants : Under 4 : Over 4 : : in. dia.: in. dia.: Total:					
	<u>Pounds per tree</u>	<u>Pounds per tree</u>	<u>Pounds per tree</u>	<u>Pounds per tree</u>	<u>Pounds per tree</u>	<u>Pounds per tree</u>					
2	5	0	5	4	0	8	5	0	5		
3	10	0	10	8	0	15	15	11	11		
4	23	0	23	15	0	25	25	24	24		
5	33	8	41	19	9	28	35	44	35	8	43
6	48	20	68	25	23	48	50	72	52	18	70
7	69	37	106	31	46	77	70	112	73	36	109
8	89	60	149	39	74	113	90	157	101	57	158
9	119	92	211	51	114	165	120	216	130	87	217
10	149	132	281	63	161	224	150	293	168	124	292











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