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SLASH WEIGHT TABLES FOR WESTSIDE MIXED CONIFERS

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PACIFIC SOUTHWEST
FOREST AND RANGE
EXPERIMENT STATION
BERKELEY - CALIFORNIA

FOREST SERVICE - U. S. DEPARTMENT OF AGRICULTURE

SLASH WEIGHT TABLES
FOR WESTSIDE MIXED CONIFERS

Craig C. Chandler

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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.

^{1/} 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 :			: : : : : :	: Branches and Tops :			: : : : : :
	: Under : Over :		: Under : Over :					
	: Needles : 4 in. dia. :	: 4 in. dia. :	: Needles : 4 in. dia. :		: 4 in. dia. :			
- - 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			: 4 in. dia.			: Under			: Over			Total
	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	: 4 in. dia.	
	- - 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:

Dry Weight of Slash:

Crown length: 60% of Total Tree Height

[illegible]

Dry Weight of Slash: PONDEROSA PINE
Crown length: 80% of Total Tree Height

D.b.h., in.	Branches and Tops			Total	Needles	Branches and Tops			Total
	4 in. dia.	4 in. dia.				4 in. dia.	4 in. dia.		
		Under	Over				Under	Over	
12	60	160	65	285	2,000	5,330	2,230	9,560	
14	80	220	65	365	1,000	2,750	800	4,550	
16	110	330	60	500	785	2,360	435	3,580	
18	150	480	60	690	680	2,180	260	3,120	
20	200	700	55	955	620	2,190	170	2,980	
22	260	970	55	1,285	590	2,200	120	2,910	
24	340	1,320	50	1,710	580	2,240	90	2,910	
26	430	1,730	60	2,220	570	2,290	80	2,940	
28	540	2,160	150	2,850	550	2,250	190	2,990	
30	660	2,600	360	3,620	540	2,190	320	3,050	
32	800	3,070	700	4,570	530	2,120	480	3,130	
34	960	3,540	1,150	5,650	530	2,040	570	3,240	
36	1,140	4,050	1,720	6,910	545	1,970	855	3,370	
38	1,350	4,560	2,430	8,340	560	1,910	1,040	3,510	
40	1,580	5,100	3,300	9,980	580	1,860	1,220	3,660	
42	1,830	5,640	4,320	11,790	595	1,815	1,410	3,820	
44	2,100	6,200	5,700	14,000	610	1,780	1,600	3,990	
46	2,420	6,730	7,200	16,350	630	1,750	1,790	4,170	
48	2,780	7,300	8,980	19,060	645	1,720	1,995	4,360	
50	3,170	7,950	10,800	21,920	660	1,695	2,215	4,570	
52	3,600	8,610	13,000	25,210	680	1,670	2,440	4,790	
54	4,040	9,380	15,600	29,020	695	1,650	2,675	5,020	
56	4,500	10,100	18,300	32,900	710	1,630	2,920	5,260	
58	4,910	10,900	21,200	37,010	725	1,615	3,170	5,510	
60	5,270	11,900	24,400	41,170	740	1,600	3,430	5,770	

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

D.b.h., in.	Branches and Tops			Branches and Tops			Total	Needles			4 in. dia.			Total
	Under	Over	:	Under	Over	:		4 in. dia.	Over	:	Under	Over	:	
	4 in. dia.	4 in. dia.	:	4 in. dia.	4 in. dia.	:		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	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		Total		Branches and Tops		Needles		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 tree		Pounds per tree		Pounds per tree	
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: 60% of Total Tree Height

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

Dry Weight of Slash: DOUGLAS-FIR

Crown length: 20% of Total Tree Height

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

Dry Weight of Slash: DOUGLAS-FIR
Crown length: 40% of Total Tree Height

D.b.h., in.	Needles		Branches and Tops		Total		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 tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree	
12	35	70	85	190	1,700	3,700	1,700	3,700	4,200	9,600		
14	40	95	80	215	1,120	2,350	1,120	2,350	2,300	5,770		
16	55	140	75	270	430	960	430	960	450	1,840		
18	75	200	70	345	350	880	350	880	280	1,510		
20	100	280	70	450	315	840	315	840	200	1,360		
22	125	355	65	545	290	810	290	810	155	1,260		
24	150	440	65	655	270	785	270	785	120	1,180		
26	180	550	60	790	255	765	255	765	90	1,120		
28	210	670	60	940	240	750	240	750	75	1,060		
30	245	800	60	1,100	230	740	230	740	60	1,030		
32	285	950	55	1,290	220	730	220	730	45	1,000		
34	330	1,130	55	1,510	215	735	215	735	35	985		
36	380	1,350	55	1,780	210	740	210	740	30	980		
38	435	1,600	50	2,090	205	745	205	745	25	975		
40	500	1,880	50	2,430	205	760	205	760	20	985		
42	570	2,180	50	2,800	200	775	200	775	20	995		
44	640	2,520	50	3,210	200	790	200	790	15	1,010		
46	720	2,890	50	3,660	200	805	200	805	15	1,020		
48	800	3,320	50	4,170	200	825	200	825	10	1,040		
50	890	3,780	45	4,720	200	845	200	845	10	1,060		
52	985	4,270	45	5,300	200	865	200	865	10	1,070		
54	1,090	4,800	45	5,940	200	890	200	890	10	1,100		
56	1,200	5,390	45	6,640	200	915	200	915	5	1,120		
58	1,320	6,020	45	7,380	200	940	200	940	5	1,150		
60	1,450	6,680	45	8,170	205	965	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 :			: : :			: Branches and Tops :		
	Needles :	Under : 4 in. dia. :	Over : 4 in. dia. :	Total :	Needles :	4 in. dia. :	Under : 4 in. dia. :	Over : 4 in. dia. :	Total :
		- - Pounds per tree - -					- - 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

[illegible]

Dry Weight of Slash: WHITE FIR
Crown length: 40% of Total Tree Height

D.b.h., in.	Needles		4 in. dia.		Total		Needles		4 in. dia.		Under		Over		Total		4 in. dia.		Under		Over		Total	
	Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree		Pounds per tree	
12	50	65	65	180	1,060	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260
14	60	80	65	205	630	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900
16	75	105	70	250	470	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655
18	95	140	70	305	395	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570	570
20	120	185	55	370	345	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515	515
22	150	235	65	450	305	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475
24	185	300	60	545	285	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450	450
26	225	375	60	660	270	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440
28	280	465	55	800	265	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440
30	330	570	55	955	260	445	445	445	445	445	445	445	445	445	445	445	445	445	445	445	445	445	445	445
32	390	690	55	1,130	260	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455	455
34	465	825	50	1,340	260	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465	465
36	545	990	50	1,580	260	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475	475
38	630	1,180	50	1,860	260	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490	490
40	720	1,390	50	2,160	265	505	505	505	505	505	505	505	505	505	505	505	505	505	505	505	505	505	505	505
42	825	1,630	45	2,500	265	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520
44	930	1,890	45	2,860	270	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
46	1,060	2,200	45	3,300	275	555	555	555	555	555	555	555	555	555	555	555	555	555	555	555	555	555	555	555
48	1,200	2,520	45	3,760	275	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575	575
50	1,350	2,870	45	4,260	280	595	595	595	595	595	595	595	595	595	595	595	595	595	595	595	595	595	595	595
52	1,510	3,240	40	4,790	285	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615	615
54	1,690	3,670	40	5,400	290	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635
56	1,880	4,140	40	6,060	295	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655	655
58	2,080	4,660	40	6,780	300	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675	675
60	2,300	5,200	40	7,540	310	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700

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

D.b.h., in.	Branches and Tops			Needles			Pounds per MBF			Total		
	Under	Over	4 in. dia.	Under	Over	4 in. dia.	Under	Over	4 in. dia.	Under	Over	4 in. dia.
Pounds per tree												
Pounds per MBF												
12	80	100	65	240	1,520	2,000	1,260	4,780				
14	90	115	65	270	1,060	1,470	735	3,200				
16	110	150	70	330	690	1,010	430	2,130				
18	140	215	70	415	585	920	270	1,780				
20	180	300	65	545	515	845	190	1,550				
22	225	395	65	685	465	790	130	1,380				
24	280	500	60	840	430	750	90	1,270				
26	345	630	60	1,030	405	735	70	1,210				
28	415	780	55	1,250	390	735	55	1,180				
30	500	960	55	1,520	390	750	45	1,190				
32	595	1,170	55	1,820	390	770	35	1,200				
34	700	1,400	50	2,150	395	790	30	1,210				
36	810	1,670	50	2,530	395	810	25	1,230				
38	940	1,980	50	2,970	400	830	20	1,250				
40	1,080	2,330	50	3,460	400	855	20	1,270				
42	1,230	2,720	45	4,000	405	885	15	1,310				
44	1,400	3,130	45	4,580	410	910	15	1,340				
46	1,600	3,630	45	5,270	415	940	10	1,370				
48	1,810	4,180	45	6,030	420	970	10	1,400				
50	2,040	4,800	45	6,880	425	1,000	10	1,430				
52	2,280	5,420	40	7,740	430	1,030	10	1,470				
54	2,540	6,130	40	8,710	440	1,070	5	1,520				
56	2,820	6,910	40	9,770	445	1,100	5	1,550				
58	3,110	7,700	50	10,900	450	1,130	10	1,590				
60	3,410	8,570	60	12,000	460	1,160	10	1,630				

WHITE FIR
Crown length: 80% of Total Tree Height

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Dry Weight of Slash:

INCENSE CEDAR

Crown length:

40% of Total Tree Height

[illegible]

Dry Weight of Slash: INCENSE CEDAR
Crown length: 60% of Total Tree Height

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

Dry Weight of Slash:

INCENSE CEDAR

Crown length: 80% of Total Tree Height

D.b.h., in.	Needles		Branches and Tops		Needles		Branches and Tops		Total	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 tree		Pounds per tree		Pounds per tree			Pounds per tree		Pounds per tree		
12	45	55	55	80	180	2,200	2,800	4,050	9,050					
14	55	75	75	85	215	1,490	2,010	2,100	5,600					
16	75	105	105	85	265	1,160	1,620	1,280	4,060					
18	100	150	150	90	340	940	1,360	820	3,120					
20	130	200	200	90	420	790	1,170	520	2,480					
22	165	260	260	90	515	720	1,110	375	2,200					
24	200	330	330	85	615	670	1,080	290	2,040					
26	245	415	415	85	745	635	1,060	220	1,920					
28	295	515	515	85	895	610	1,040	165	1,820					
30	350	630	630	80	1,060	585	1,030	130	1,740					
32	420	770	770	80	1,270	570	1,020	105	1,700					
34	485	920	920	75	1,480	550	1,030	85	1,570					
36	565	1,100	1,100	75	1,740	540	1,040	75	1,550					
38	650	1,300	1,300	75	2,020	530	1,050	60	1,540					
40	745	1,530	1,530	70	2,350	530	1,070	50	1,550					
42	845	1,800	1,800	70	2,720	525	1,100	45	1,570					
44	950	2,060	2,060	70	3,080	525	1,120	40	1,580					
46	1,080	2,350	2,350	95	3,530	530	1,140	45	1,710					
48	1,200	2,630	2,630	155	3,980	530	1,150	65	1,750					
50	1,350	2,910	2,910	255	4,520	535	1,150	105	1,790					
52	1,500	3,160	3,160	410	5,070	540	1,140	155	1,840					
54	1,680	3,400	3,400	620	5,700	545	1,120	210	1,880					
56	1,850	3,630	3,630	880	6,360	550	1,100	265	1,920					
58	2,020	3,840	3,840	1,170	7,030	560	1,070	320	1,950					
60	2,200	4,030	4,030	1,510	7,740	570	1,030	385	1,990					

DRY WEIGHT OF CULL LOGS AND CHUNKS

Diameter	:	:	:	Sugar pine,		
at small	:	Douglas-	:	Ponderosa	:	white fir,
end, in.	:	fir	:	pine	:	incense-cedar
<hr/>						
		<u>Pounds per MBF cull^{1/}</u>				
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

^{1/} 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.

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