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Use of Indexing to Update U.S. Annual Timber Harvest by State

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Abstract

This report provides an index method that can be used to update recent estimates of timber harvest by state to a common current year and to make 5-year projections. The Forest Service Forest Inventory and Analysis (FIA) program makes estimates of harvest for each state in differing years. The purpose of this updating method is to bring each state-level estimate up to a common current year. For each state, each of several components of harvest is updated to the current year. Estimate outputs are based on inputs from established models such as Timber Cut (TCUT) and historical wood products production data collected and compiled by the Forest Inventory and Analysis (FIA) program and the U.S. Forest Service Forest Products Laboratory. Because annual harvest data by state are not generally available for each year, the development of this indexing procedure based on national- and state-level primary product production data is needed to update U.S. annual timber harvest by state and region. This procedure is also needed for reporting annual harvest statistics and forecasts to the United Nations Economic Commission for Europe (UNECE) and the Food and Agriculture Organization (FAO). This paper reports the results in the development of historical and projected estimates of timber harvest. This new system of harvest estimation and index development is termed the harvest estimation system.

Keywords: timber harvest index, forest products, FIA, FPL

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Conversion Factors[a]

Saw logs	
Softwood	0.18018 cubic foot = 1 board foot
	5.55 board feet = 1 cubic foot
Hardwood	0.16556 cubic foot = 1 board foot
	6.04 board feet = 1 cubic foot
Veneer logs	
Softwood	0.17391 cubic foot = 1 board foot
	5.75 board feet = 1 cubic foot
Hardwood	0.15873 cubic foot = 1 board foot
	6.30 board feet = 1 cubic foot
Pulpwood[b]	
Softwood	72.5 cubic feet per cord
Hardwood	76.6 cubic feet per cord

[a] Conversion factors vary with stem size (d.b.h.), species, and region.

[b] Cubic feet of solid wood per cord.

1 cubic foot = 0.028317 m^3

1 in. = 0.0254 m

Use of Indexing to Update United States Annual Timber Harvest by State

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Introduction

The purpose of this paper is to provide a method to update recent estimates of timber harvest by state to a common current year and make 5-year projections. This approach satisfies the need for a system to estimate annual state-level harvest because we do not have such a system for the United States. Currently, U.S. Forest Service Forest Inventory Analysis (FIA) units conduct state-level surveys, in different years, of businesses that receive roundwood to make products and use this survey information to make state-level harvest estimates (Smith and others 2004). The indexing methods provided in this report will allow for state-level estimates, made in different years, to be updated to a common recent year. Annual estimates of harvest are needed for each state to complement state-level FIA estimates of timber inventory. Such harvest estimates can now be provided by the harvest estimation system (HES) explained in this report.

This indexing method is intended to give estimates of the total volume of wood harvested in the United States to make forest products in the United States and to provide for wood exports (Table 1). The estimate is intended to correspond to "roundwood products harvested from all sources" reported in FIA forest resource reports (Smith and others 2004, table 39) and estimated 5-year projections of harvest based on the most recent in the Resource Planning Act (RPA) Timber Assessment reports (Haynes 2003, table 16).

In this analysis, "timber harvest" refers specifically to the total volume of wood removed from a forest site for the purposes of conversion to products or direct use by consumers from both growing stock and other sources. Growing stock is a classification of timber inventory that includes live trees of commercial species meeting specific standards of vigor and quality. Cull trees are excluded. When associated with volume, only trees 5 in. diameter at breast height (DBH) and larger are included. Other sources (not growing stock) include salvageable dead trees, rough and rotten trees, trees of non-commercial species, trees less than 5 in. DBH, tops, and roundwood harvested from non-forest land (for example, fence rows).

Timber harvest estimates include saw and veneer logs for domestic processing; logs of all types for export; logs for conversion to miscellaneous products (for example, posts, poles, pilings, shingles); pulpwood and logs for use in pulping and reconstituted panels; and fuelwood. Estimates do not include timber cut but not removed from the site for use, timber excluded from inventory accounting because of a change in land-use designation, or logging residues. Harvest estimates are for volumes harvested arising from any forest land, not just timberland (Adams and others 2006). Forest land is at least 10% stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated, and includes transition zones and afforested areas. Timberland is defined as forest land that is producing or capable of producing crops of industrial wood in excess of 20 ft^3 per acre per year and not withdrawn from timber use by statute or administrative regulation.

Methods are presented separately to update state-level estimates of harvest of sawlogs, including exported logs; veneer logs, including exported logs; wood for composite panel products; pulpwood for pulp production and export; fuelwood; and miscellaneous products.

Methods

The objective of our methods is to update state-level estimates of harvest for each of 12 timber products shown in Table 1 and to provide 5-year projections. Updated methods are explained separately for each of four categories of timber products shown in Table 1.

The state-level estimates of annual timber product output needing updating are obtained from the most recent FIA state-level timber product output surveys. For the purpose of this paper and later estimates, we begin with state-level timber product output (TPO) estimates from Johnson (2001). The base year of TPO data input into HES is noted in table 1.5 of Johnson (2001). In HES, some state timber product output volumes were estimated for 1996 when survey data were not available. The selection of 1996 as the base year was driven by the existence of comprehensive state-level data required to establish the base year.

Updating Estimates of Timber Harvested for Solidwood Products

Harvest of each of the 12 timber products in Table 1 is updated for a given state by multiplying the recent harvest level for a given year by a regional harvest growth rate for year i to bring the harvest level estimate up to current year t.

A regional harvest index is developed for each of eight regions. These regions are the same as the RPA Timber

Assessment regions employed in the Forest Service's 10-year Renewable Resource Assessments with one exception (Table 2) (Haynes 2003). The single difference is in forming the Pacific Northwest region where eastern Washington and Oregon were combined with western Washington and Oregon.

$$H_{PSt} = (\text{HINDEX}_{PRt} / \text{HINDEX}_{PRi}) \times H_{PSi} \qquad (1)$$

where

P	is	the timber product (products 1 to 12 in Table 1)
R		region where state is located
S		state
i		year for which harvest estimate is available
t		year for updated estimate of harvest
H_{PSi}		estimated harvest of timber product P in state S for year i in cubic feet
H_{PSt}		estimated harvest of timber product P in state S for year t in cubic feet
HINDEX_{PRi}		value of harvest index for timber product P in region R for year i (for base year 1996, the index equals 100)
HINDEX_{PRt}		value of harvest index for timber product P in region R for year t (for base year 1996, the index equals 100)

The harvest index for a given year, product, and region is developed by making actual estimates of harvest for each timber product and region, then converting these harvest estimates to an index where 1996 = 100. The estimates of timber product harvest by region are made by, first, estimating the wood harvest needed to make each of one or more primary products (e.g., sawlogs needed for lumber) and second, adding on the amount of the timber product that is exported (if needed).

$$\text{HINDEX}_{PRt} = H_{\text{est}PRt} / H_{\text{est}PR1996} \qquad (2)$$

$$H_{\text{estPRt}} = \text{PP}_{RPt} \times \text{CF}_{RPt} + \text{Export}_{PRt} \qquad (3)$$

where

$H_{\text{est}PRt}$	is	estimated harvest of timber product P in region R in year t in cubic feet
PP_{RPt}		a vector of the amounts of primary products made in region R from timber product P in year t (The primary products made from each timber product are shown in Table 1. Amount units vary by primary product, e.g., thousand board feet for lumber).
CF_{RPt}		a vector of factors to convert amount of primary product produced into the amount of timber product input required (Units are cubic feet timber product input per unit of primary product output.)
Export_{PRt}		amount of timber product P exported from region R in year t in cubic feet

The indexes allow updating of state-level timber product harvest to a current year (and each individual year) because estimates of primary product production are available each year and for more recent years than the FIA state-level TPO estimates.

In making and using the indexes (Tables 3–18), we assumed that the state-level estimates of timber products harvest (based on FIA surveys) that are being updated include amounts of exported timber products. Currently, in excess of 10 million ft^3 of logs are shipped internationally each year and must be accounted for in the estimation. Otherwise, domestic harvest would be underestimated if the exported amount is not accounted for. National-level export estimates are assigned to regions using regional proportions developed from U.S. Department of Commerce trade data (1958–2002).

The Timber Cut (TCUT) spreadsheet model (Adams and others 2006) is used as a basis for estimating timber product harvest by region and year. Our model, the HES, uses the TCUT framework and the following levels of spreadsheets to create the regional timber product harvest indexes and state-level estimates.

First Level

This level contains annual national primary product production data. The primary products are noted in Table 1. Data are updated to a current year using Forest Service and industry summary reports based on government and industry surveys. These data are both regional and national (Howard 2007).

Second Level

This level contains historical regional TPO data as well as annual national primary product production data from the first level. The national primary product data are disaggregated to the eight regions using historical regional proportions for the primary products noted in Table 1 when regional TPO data are unavailable.

Third Level

Primary product production amounts by region are converted to the amount of timber product harvest required to make them using conversion factors from the TCUT model (Adams and others 2006) and updated to the current year. It is assumed that products produced in a region use wood harvested in the region and that the amount of imported timber products used to make primary products is small. Estimates of wood imports are included at this level.

Fourth Level

Estimates of regional timber product harvest are displayed in regional tables, with each regional table containing columns for each timber product. Regional harvest amount

estimates are shown from 1950 to the current year. Regional growth rates of harvest are computed year to year for each timber product. Interpolation is done to estimate amounts for years when data is missing.

Fifth Level

Estimates of timber harvest are shown for each state by year, where the regional timber harvest growth rate for each TPO product (such as sawlogs) has been used to update state-level estimates for each TPO product category to the current year. See the resulting estimate of harvest by state in Table 19. This approach employs an implicit weighting scheme because it uses that state's roundwood harvest for a particular TPO product, multiplied by the particular TPO product's annual regional growth rate, positive or negative, in the region where the state is located for that particular product. As a result, each state receives the proportional harvest amount the next year depending on that state's prior year harvest amount. The state-level estimate is computed only when state-level TPO data are unavailable. When state-level TPO data are available, the system uses the known harvest volume. All known state-level TPO data are input in this fifth level.

Sixth Level

Indexes are displayed for each timber product and region, where estimates of timber product harvest by region and year are converted to an index where 1996 = 100. The state and regional indexes are the same for any state and the associated region because the regional index in 1996, the base year, is computed from the aggregation of state-level harvest for each state in the region containing those states.

Figure 1 depicts the hierarchy of the files input into the HES. Each level depends on data from files in the level below it to carry out its calculations. The results of the calculations are handed off to the file(s) in the level above it.

Updating Special Product Harvest

Pulpwood and fuelwood are the only two products without a distinct primary and secondary product. Pulpwood is input into HES as mill receipts, then updated to the current year. Timber Products Output fuelwood estimates are derived from U.S. Department of Energy (DOE) estimates that use wood use per heating degree day ratios to interpolate between DOE survey years. In both cases, regional harvest indexes are developed and updated.

Application of Methods

State-level estimates of harvest are derived in the selected year for each of the TPO product categories shown in Table 1. The method used to derive miscellaneous products harvest indexes are the same as for the products in the solid wood category, although miscellaneous is listed as a separate product. This is because miscellaneous products have a distinct primary and secondary product, unlike fuelwood or pulpwood.

Example of Updating Timber Product Harvest for a State

The HINDEX_{PRt} values are determined by taking the state harvest volume for each TPO product in a given year, dividing by the 1996 (base year) harvest level, then multiplying by 100.

$$\text{HINDEX}_{PRt} = (\text{HV}_{PRt}/\text{BY}_{PRt}) \times 100 \qquad (4)$$

where

HV_{PRt}	is	the harvest volume for TPO product P in region R in year $t = 2005$
BY_{PRt}		the harvest volume for TPO product P in region R in year $t = 1996$

Recall from Equation (1) that

$$H_{PS2005} = (\text{HINDEX}_{2005}/\text{HINDEX}_{1996}) \times H_{PS1996}$$

For softwood sawlogs in the Northeast, we have

$$\text{HINDEX}_{PR2005} = 131.5$$

(see Table 7 for Northeast/softwood)

$$\text{HINDEX}_{PR1996} = 100$$

For Connecticut softwood sawlogs, we have

$$H_{\text{sawlogs_ct_2005}} = (\text{HINDEX}_{\text{sawlogs_NE_2005}}/\text{HINDEX}_{\text{sL_N_1996}}) \times H_{\text{sawlogs_CT_1996}}$$

$$= (131.5/100) \times 3302 = 4343$$

The index of 131.5 when multiplied by the TPO estimate of softwood sawlog harvest in 1996 will yield the softwood sawlog harvest estimate for 2005, as shown in Tables 20 and 21.

Updating Timber Product Harvest for all States—Totals Shown by Region

The regional index series and the state-level index series are the same for any TPO product, region, and year.

For softwood sawlogs in the Northeast in 2005 (Table 7),

$$\text{HINDEX}_{PRt} = 131.5$$

Using Equation (4) to estimate sawlog harvest for the Northeast in 2005, we have

$$\text{HV}_{PR2005} = (\text{HINDEX}_{PR2005} \times \text{BY}_{pnortheast1996})/100$$

$$= (131.5 \times 259{,}284)/100 = 341{,}043$$

The index of 131.5 when multiplied by the regional volume in the base year (Table 21a for 1996) yields the harvest estimate in 2005 for softwood sawlogs shown in Table 21b.

Once the regional harvest index is derived by TPO product, region, and year, that index can be used to make TPO estimates of state harvest in a given year and move it into the future by multiplying by the regional index for that future year. Harvest indexes for each region and TPO product are shown in Tables 3–18. These indexes were used to take 1996 state-level TPO estimates from Johnson (2001) and move them to 2005. Results for state and national estimates for 2005 are shown in Tables 19 and 22.

Projections

The HES model has been used to project national harvest by TPO product (Table 23). This is done using the projected harvest growth rates from Haynes (2003, table 16) to project growth in TPO product harvest in HES starting in 2005. When comparing the projections from HES to existing RPA harvest projections, the projections from HES tracks existing RPA timber harvest projections over the 5-year projection period consistently varying by less than 5% of U.S. harvest in year 2010.

Index Verification

The question of how well the estimated index tracks actual harvest in a state or region can best be judged through verification or the comparison of actual harvest in a particular state or region to the estimated harvest based generated by the index over time. The Southern region, which includes the Southeast and South Central regions of the United States, produces roughly 65% of the Nation's roundwood harvest. The comparison of actual TPO harvest and the estimated harvest based on the index for Alabama in the South Central region are contained in Tables 24–26. The comparison of actual and predicted values for the year 2005 shows that the HES system estimates for timber product output are within an average of 6% of actual value by product category. The comparison of actual TPO for Georgia in the Southeast region to estimates of TPO produced by HES again shows that estimates are within an average of 6% of actual TPO. In the North Central region, actual compared with predicted harvest values for 2003 are within an average of 2% by product category.

Conclusions

This work to produce annual TPO harvest indexes was accomplished by merging three separate harvest estimation systems or approaches. The Forest Products Laboratory system for estimating roundwood equivalent of primary product production, the Adams and Haynes TCUT system, and the historical TPO survey approach. Merging these three systems resulted in a new six-level harvest estimation system, HES. The output of the HES system is harvest indexes (Tables 3–18). These indexes can be used to update state-level TPO/FIA data to a recent year. The methods and indexes provide are intended to be used to update timber product output estimates when TPO/FIA survey results are not available.

The basic approach to state harvest estimation is to use national data of product output volumes compiled from government agencies and industry trade association reports, along with available FIA regional or state harvest data and convert them to their regional roundwood or logs equivalents, then apportion these regional volumes to states using that state roundwood production and regional growth rates.

This effort helps accomplish the goal set forward in the 1998 Farm Bill (USDA 2007) to develop an annualized forest inventory so users can have current data for their planning and decision making processes. The production of harvest indexes used to estimate future harvest helps accomplish RPA national timber assessment objectives. A total of 15 product categories enter into the computation and estimation of harvest (Table 21). They are equated by the use of product recovery rates, which differ for each of the 15 solid wood product classes. The product recovery rates also change over time to reflect the change in the timber resource characteristics. The outputs for this work will also be displayed in table form equivalent to historical TPO outputs (Table 22). The model is also capable of projecting future harvest totals out to the year 2010, as shown in Table 23.

References

Adams, D.A.; Haynes, R.W.; Daigneault, A.J. 2006. Estimated timber harvest by U.S. region and ownership, 1950–2002. Gen. Tech. Rep. PNW–GTR–659. Portland, OR: U.S. Forest Service, Pacific Northwest Research Station.

Haynes, R.W. 2007. Developing and using composite indices to describe broadscale trends in forest management. Forest Policy and Economics 9(5): 440–451.

Haynes, R.W. 2003. An analysis of the timber situation in the United States: 1952–2050. Gen. Tech. Rep. PNW–GTR–560. Portland Oregon: U.S. Forest Service, Pacific Northwest Research Station. 254 p.

Howard, J.L. 2007. U.S. timber production, trade, consumption, and price statistics 1965 to 2005. Res. Pap. FPL–RP–637. Madison, WI: U.S. Forest Service, Forest Products Laboratory. 91 p.

Howard, J.L. 2005. Estimation of U.S. timber harvest using roundwood equivalents. United States Department of Agriculture Forest Service. In: Proceedings of the Sixth Annual Forest Inventory and Analysis Symposium. Gen. Tech. Report. WO–70.

Johnson, Tony G. 2001. United States timber industry—an assesment of timber product output and use, 1996: U.S. Forest Service, Asheville, N.C.

Smith, W.B, J.S. Vissage, D.R. Darr, and R.M. Sheffield. 2001. Forest resources of the United States, 1997. Gen. Tech. Rep. NC–219. St. Paul, MN: U.S. Forest Service, North Central Research Station. 190 p.

U.S. Department of Agriculture. 2007. Farm bill proposals. Title VIII: Forestry. www.USDA.gov/wps/portal/forestry.

U.S. Department of Commerce. 1958–2002. Lumber production and mill stocks. Curr. Ind. Rep. Ser. MA-321T(02)-1. Washington, D.C. Annual.

Waddell, K.L., D.D. Oswald, and D.S. Powell. 1989. Forest statistics of the United States, 1987. Resource Bulletin PNW–168. Portland, OR: U.S. Forest Service, Pacific Northwest Research Station. 106 p.

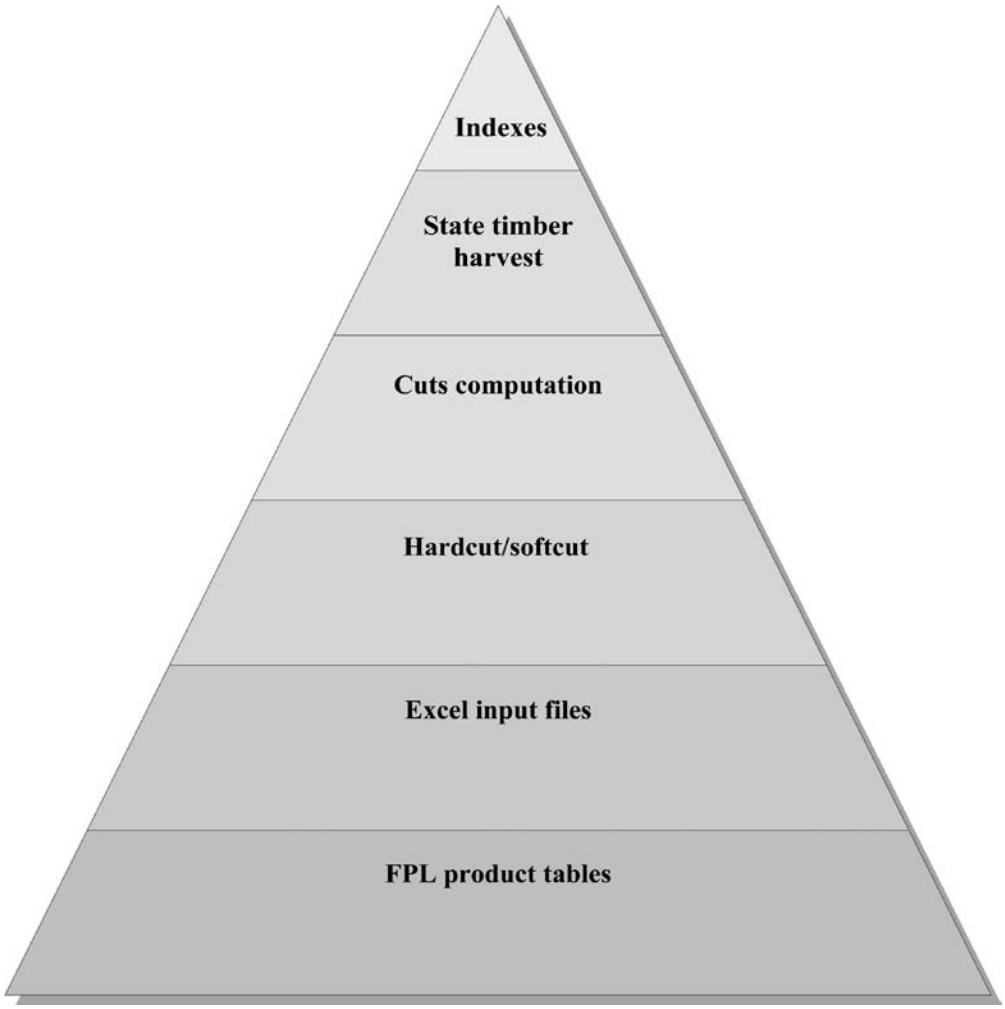

Figure 1. Hierarchy of files used in the harvest estimation system. Each level depends on data from files in the level below it to carry out its calculations. The results of the calculations are handed off to the file(s) in the level above it. (Excel is a trademark of Microsoft Corp., Redmond, Washington.)

Table 1—Timber products by category with primary products produced and exports included[a]

Timber product category	Timber product	Primary products	Exports
Timber for solidwood products	1. Hardwood sawlogs	Hardwood lumber pallets	Hardwood logs
	2. Softwood sawlogs	Softwood lumber	Softwood logs
	3. Hardwood veneer logs	Hardwood veneer Hardwood plywood	Hardwood logs
	4. Softwood veneer logs	Softwood plywood Laminated veneer lumber	Softwood logs
	5. Hardwood used for composite panels 6. Softwood use for composite panels	Oriented strandboard Particleboard Hardboard Medium-density fiberboard Insulating board	
Pulpwood	7. Hardwood pulpwood	Hard- and softwood pulpwood	Hardwood pulpwood
	8. Softwood pulpwood		Softwood pulpwood
Miscellaneous products	9. Hardwood to make miscellaneous products 10. Softwood to make miscellaneous products	Post, poles, and pilings	
Fuelwood	11. Hardwood fuelwood	Hard- and softwood fuelwood	
	12. Softwood fuelwood		

[a] Primary products are made directly from the timber product, and exports are included in timber product.

Table 2—Timber harvest regions

Area	States
Pacific Northwest	Washington, Oregon
Pacific Southwest	California
Rocky Mountain South	Arizona, New Mexico, Nevada, Utah, Colorado, Wyoming
Rocky Mountain North	Idaho, Montana
North Central	North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, Ohio
South Central	Texas, Oklahoma, Arkansas, Louisiana, Alabama, Mississippi, Tennessee, Kentucky
Southeast	Florida, Georgia, South Carolina, North Carolina, Virginia
Northeast	West Virginia, Pennsylvania, New York, Maryland, Delaware, New Jersey, Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, Maine

Table 3—Softwood harvest indexes (1996 = 100), Pacific Northwest

Year	Sawlogs	Veneer logs	Pulpwood	Fuelwood	Misc. products
1965	79.70	113.68	—	9.68	113.41
1966	77.24	110.03	—	9.83	125.01
1967	76.41	107.49	—	10.22	121.29
1968	81.68	130.52	—	10.67	126.11
1969	76.73	116.43	—	10.83	163.57
1970	76.37	121.30	—	12.95	185.94
1971	79.19	132.65	—	12.13	171.52
1972	88.55	157.09	—	12.28	149.34
1973	90.06	159.96	—	11.47	141.63
1974	79.91	136.62	—	12.40	123.78
1975	78.46	134.97	—	11.69	111.50
1976	86.00	166.59	—	11.24	109.66
1977	90.17	164.39	—	10.78	106.79
1978	95.34	175.76	—	28.39	103.92
1979	95.92	175.28	78.59	62.45	103.08
1980	78.89	140.93	66.06	124.75	100.16
1981	74.06	124.99	46.67	137.45	97.23
1982	73.94	125.05	46.85	155.26	95.38
1983	102.40	162.85	42.63	157.56	92.86
1984	106.16	163.81	52.14	180.07	90.24
1985	106.31	167.60	79.58	180.38	89.08
1986	120.71	186.79	85.78	194.53	86.27
1987	134.96	196.34	97.56	161.25	98.50
1988	135.35	193.68	95.24	159.70	99.78
1989	131.93	165.84	144.82	171.09	114.53
1990	116.68	145.83	126.60	174.15	120.43
1991	105.51	123.20	118.49	179.53	122.19
1992	103.28	116.80	104.67	146.58	115.62
1993	94.29	104.92	98.99	127.24	106.74
1994	95.24	101.31	103.92	114.67	106.16
1995	95.52	101.54	118.84	112.25	107.38
1996	100.00	100.00	100.00	100.00	100.00
1997	100.19	85.65	102.04	87.33	96.01
1998	98.97	83.04	120.23	96.21	88.30
1999	102.60	85.29	100.22	94.65	85.84
2000	102.53	87.74	101.63	93.33	85.98
2001	104.37	80.53	78.73	92.13	146.34
2002	118.42	68.56	60.60	109.15	24.50
2003	120.59	89.60	48.36	130.51	28.76
2004	131.31	97.66	53.29	134.75	31.43
2005	131.95	95.52	54.49	135.17	30.96
2006	131.95	95.52	54.49	135.17	30.96
2007	132.41	91.85	55.00	130.50	31.25
2008	132.68	88.13	55.11	125.08	31.61
2009	132.96	84.33	54.39	119.65	32.00
2010	132.56	80.15	53.49	113.86	32.46

Source: Harvest estimation system (HES).

Table 4—Hardwood harvest indexes (1996 = 100), Pacific Northwest

Year	Sawlogs	Veneer logs	Pulpwood	Fuelwood
1965	10.43	20.39	5.02	1.84
1966	14.46	19.13	5.16	2.17
1967	13.99	23.18	4.34	2.58
1968	14.85	25.44	8.02	3.03
1969	12.07	22.06	8.47	3.39
1970	9.83	23.03	9.06	4.56
1971	11.32	28.95	7.73	4.48
1972	11.00	30.68	9.04	4.62
1973	12.43	27.67	14.35	4.39
1974	14.99	22.61	21.84	4.86
1975	12.10	16.19	18.15	4.66
1976	15.74	16.79	27.61	4.57
1977	15.78	19.09	24.37	-1.43
1978	16.94	18.03	20.95	5.94
1979	17.65	17.01	24.67	17.43
1980	27.32	17.82	26.02	33.65
1981	26.17	17.72	24.71	49.88
1982	36.42	32.31	23.44	112.90
1983	27.41	33.86	17.08	127.12
1984	27.89	35.10	33.80	161.58
1985	27.62	31.58	35.12	173.26
1986	37.63	33.14	35.91	199.76
1987	41.00	37.57	38.66	167.52
1988	47.85	40.47	44.66	161.68
1989	55.18	61.10	35.26	152.29
1990	64.27	79.19	96.56	150.62
1991	72.74	101.34	125.08	192.48
1992	74.10	88.30	132.09	154.62
1993	97.88	86.39	108.19	131.59
1994	97.25	104.36	119.51	115.94
1995	97.11	103.25	116.34	115.38
1996	100.00	100.00	100.00	100.00
1997	102.54	106.03	96.30	100.34
1998	89.70	111.73	108.01	104.42
1999	100.58	115.14	103.00	115.07
2000	104.79	133.09	93.82	125.93
2001	101.17	124.77	77.65	136.91
2002	101.38	126.16	76.88	138.76
2003	92.76	124.66	64.35	138.30
2004	100.91	126.33	74.00	140.58
2005	97.83	123.40	75.20	141.49
2006	97.83	123.40	75.20	141.49
2007	102.82	129.63	78.27	141.24
2008	108.23	136.25	79.93	139.67
2009	114.21	144.17	81.55	137.64
2010	119.47	152.63	83.21	134.76

Source: Harvest estimation system (HES).

Table 5—Softwood harvest indexes (1996 = 100), Southeast

Year	Sawlogs	Veneer logs	Pulpwood	Composites	Fuelwood	Misc. products
1965	40.57	0.00	72.21	—	121.46	98.50
1966	40.53	0.75	73.67	—	119.69	93.57
1967	39.66	2.63	72.24	—	120.60	80.39
1968	39.94	8.22	73.56	—	122.09	72.35
1969	38.72	11.12	78.75	—	120.19	75.50
1970	39.71	16.48	83.39	—	138.05	71.02
1971	43.78	20.42	75.94	—	138.09	69.14
1972	44.36	28.76	78.55	—	150.66	63.13
1973	44.05	32.06	80.86	—	149.63	63.44
1974	41.18	29.30	81.61	—	175.28	58.21
1975	41.31	31.85	71.49	—	175.21	55.27
1976	45.34	41.20	73.88	—	178.90	58.00
1977	49.07	48.70	76.67	—	149.73	59.73
1978	51.54	52.82	78.48	—	233.80	61.46
1979	55.07	53.09	81.15	—	329.31	64.61
1980	52.65	47.79	84.13	—	433.83	66.37
1981	53.72	65.91	84.70	—	391.73	68.14
1982	54.42	70.03	83.88	—	354.06	70.81
1983	68.80	85.20	84.75	—	292.80	72.98
1984	70.85	89.59	87.62	—	252.27	75.12
1985	71.57	89.41	84.35	—	193.17	78.74
1986	75.81	86.97	89.78	10.57	142.19	80.84
1987	80.48	90.41	96.16	14.25	123.29	108.67
1988	83.92	91.60	92.95	14.39	122.10	122.28
1989	83.34	83.50	91.19	21.20	130.81	157.09
1990	86.36	88.08	99.89	28.13	133.14	179.16
1991	79.67	73.83	103.94	34.99	207.36	194.09
1992	96.45	93.46	105.43	33.79	168.86	167.88
1993	93.64	93.18	101.55	55.02	146.12	142.35
1994	95.55	89.68	102.71	68.75	131.23	128.22
1995	94.70	107.40	108.05	71.36	111.95	117.30
1996	100.00	100.00	100.00	100.00	100.00	100.00
1997	105.40	98.10	105.60	109.88	86.91	99.98
1998	106.03	96.14	104.94	111.10	95.29	95.64
1999	108.05	94.41	94.58	110.41	93.28	96.60
2000	103.83	92.71	97.65	123.76	91.50	100.42
2001	103.73	85.11	96.93	122.40	89.85	177.22
2002	123.33	88.26	96.16	126.50	82.75	175.56
2003	92.40	91.63	95.44	223.54	49.79	128.04
2004	98.65	91.39	97.10	234.69	50.61	128.04
2005	102.50	89.22	92.12	245.71	50.94	128.04
2006	102.70	89.22	90.92	245.71	50.94	128.04
2007	105.80	88.88	91.37	290.78	47.65	131.19
2008	109.00	88.33	91.71	336.04	44.77	134.38
2009	112.38	87.78	92.22	388.47	42.54	137.53
2010	115.76	87.31	92.52	434.98	40.99	140.74

Source: Harvest estimation system (HES).

Table 6—Hardwood harvest indexes (1996 = 100), Southeast

Year	Sawlogs	Veneer logs	Pulpwood	Composites	Fuelwood	Misc. products
1965	77.09	137.29	27.52	0.91	26.48	31.97
1966	82.20	142.80	29.17	0.92	27.86	32.39
1967	78.74	133.27	30.90	0.92	30.01	30.28
1968	74.00	109.10	34.42	1.40	32.43	31.77
1969	71.11	138.99	38.65	2.58	33.91	39.31
1970	71.19	122.53	38.30	2.96	42.18	45.63
1971	70.03	133.71	36.92	4.51	43.79	38.13
1972	70.25	141.74	40.03	7.10	47.91	30.15
1973	74.87	127.84	42.95	8.24	47.69	25.28
1974	69.27	104.39	41.63	6.85	56.01	19.55
1975	59.60	93.65	35.81	5.73	56.09	15.15
1976	65.98	68.61	43.47	9.38	57.36	11.68
1977	66.83	122.23	46.57	11.42	68.30	15.33
1978	72.83	120.80	50.44	11.53	86.03	19.41
1979	84.80	111.16	46.55	11.19	95.19	22.91
1980	81.73	98.50	48.60	10.45	102.83	27.72
1981	69.16	85.47	54.11	10.40	104.10	32.97
1982	63.09	98.07	53.88	9.10	134.98	37.85
1983	84.94	100.91	61.01	12.88	122.19	43.51
1984	91.41	109.96	62.05	—	121.05	49.61
1985	90.48	99.85	62.60	—	107.99	54.64
1986	94.49	103.34	69.58	10.77	101.59	61.49
1987	96.88	114.89	67.05	14.81	87.82	87.11
1988	102.26	118.40	72.68	17.31	88.43	134.71
1989	102.78	97.75	70.42	25.79	86.75	190.15
1990	97.68	76.91	73.04	30.66	89.81	229.65
1991	87.19	62.67	78.26	34.60	123.68	259.13
1992	90.44	57.62	81.74	33.13	107.59	253.99
1993	94.40	79.81	95.81	56.93	100.06	227.94
1994	96.61	100.96	94.66	71.40	96.76	157.12
1995	99.04	103.14	111.30	69.89	104.84	130.45
1996	100.00	100.00	100.00	100.00	100.00	100.00
1997	101.93	105.40	99.83	110.31	85.20	102.79
1998	105.38	110.49	92.60	111.77	76.28	100.83
1999	115.03	113.62	93.07	110.91	73.04	104.21
2000	112.28	129.52	92.95	124.79	69.99	110.64
2001	110.29	120.57	97.13	123.93	67.03	39.24
2002	109.34	120.87	93.14	127.69	60.13	39.61
2003	101.60	86.53	72.32	67.44	52.77	50.82
2004	109.52	86.90	75.33	70.73	53.64	50.82
2005	107.60	86.02	76.18	74.16	53.99	50.82
2006	107.60	86.02	75.08	74.16	53.99	50.82
2007	108.65	86.09	75.78	97.65	52.24	55.32
2008	109.43	85.86	76.47	117.19	50.49	60.15
2009	110.29	86.00	77.16	140.40	48.99	65.38
2010	111.00	86.02	77.55	158.45	47.60	70.99

Source: Harvest estimation system (HES).

Table 7—Softwood harvest indexes (1996 = 100), Northeast

Year	Sawlogs	Veneer	Pulpwood	Composites	Fuelwood	Misc. products
1965	32.60	—	66.30	—	—	172.16
1966	32.84	—	71.03	—	—	174.30
1967	35.38	—	84.23	—	—	158.48
1968	32.79	—	91.89	—	—	153.31
1969	41.79	—	90.70	—	—	179.54
1970	42.13	—	100.24	—	—	188.29
1971	41.80	—	93.22	—	—	169.34
1972	47.23	—	86.47	—	—	143.87
1973	50.46	—	100.67	—	—	132.06
1974	49.67	—	104.69	—	—	111.97
1975	46.29	—	96.78	—	—	97.26
1976	53.39	—	103.92	—	—	91.07
1977	51.14	—	101.89	—	—	93.94
1978	60.09	—	106.26	—	—	96.81
1979	63.59	—	110.28	—	15.74	101.93
1980	54.91	—	119.05	—	71.57	104.86
1981	51.85	—	131.78	—	94.65	107.79
1982	56.88	—	117.35	—	123.69	112.15
1983	67.95	—	113.31	—	137.84	115.74
1984	68.16	—	95.66	—	173.51	119.26
1985	69.55	—	115.31	—	162.76	125.15
1986	71.85	—	113.24	—	184.38	128.61
1987	78.18	—	107.63	—	154.41	144.88
1988	82.82	—	111.94	—	152.92	145.29
1989	98.24	—	112.53	—	163.78	164.78
1990	95.66	—	94.82	58.69	166.70	171.62
1991	88.82	—	109.39	57.68	191.41	172.67
1992	95.40	—	105.95	65.41	157.49	152.19
1993	86.73	—	114.15	66.87	137.95	131.59
1994	90.82	102.92	111.62	69.15	125.58	121.49
1995	101.70	107.03	99.79	70.75	108.42	114.28
1996	100.00	100.00	100.00	100.00	100.00	100.00
1997	113.20	108.91	100.67	117.02	88.44	95.69
1998	103.92	92.40	95.68	128.96	98.70	87.70
1999	114.41	97.43	88.73	134.34	98.38	84.96
2000	124.94	106.88	85.06	137.04	98.29	84.80
2001	115.07	112.06	73.59	127.90	98.33	143.82
2002	123.47	104.38	58.61	138.21	92.29	142.47
2003	125.45	100.47	53.48	134.76	91.99	89.11
2004	129.90	97.19	61.76	144.42	93.50	89.11
2005	131.53	92.33	62.46	148.36	94.11	89.11
2006	131.53	92.33	62.46	148.36	94.11	89.11
2007	135.25	91.77	60.80	184.61	92.66	88.94
2008	139.22	91.41	59.60	229.85	90.34	88.64
2009	143.37	92.69	57.94	286.32	87.74	88.15
2010	147.62	90.18	56.29	354.68	84.61	87.54

Source: Harvest estimation system (HES).

Table 8—Hardwood harvest indexes (1996 = 100), Northeast

Year	Sawlogs	Veneer logs	Pulpwood	Composites	Fuelwood	Misc. products
1965	45.25	130.27	30.97	—	13.08	16.99
1966	47.00	126.82	34.58	—	12.15	16.53
1967	46.49	105.14	36.37	—	11.44	14.94
1968	45.02	119.74	38.19	—	10.74	15.03
1969	45.99	109.83	41.48	—	9.76	17.61
1970	42.61	96.65	45.28	—	9.95	19.49
1971	43.41	98.82	42.48	—	10.08	18.02
1972	47.42	106.01	40.73	—	10.76	15.69
1973	49.36	96.02	52.61	—	10.51	14.95
1974	46.64	78.61	54.56	—	12.05	13.03
1975	42.65	63.61	46.91	—	11.87	11.68
1976	48.25	70.35	46.64	—	11.95	10.80
1977	50.02	63.20	48.72	—	20.74	11.12
1978	51.55	67.45	56.63	—	37.93	11.37
1979	56.46	63.37	58.28	—	54.46	11.20
1980	56.09	56.27	61.08	—	74.12	11.33
1981	47.56	54.85	65.10	—	90.85	11.39
1982	58.12	95.42	63.22	—	159.70	11.21
1983	59.32	119.69	66.87	11.00	166.38	11.08
1984	67.84	109.08	59.09	16.38	195.70	10.90
1985	61.67	97.53	87.21	23.93	199.68	10.45
1986	80.49	102.09	93.21	23.84	217.56	10.18
1987	82.75	112.46	86.89	23.89	182.26	9.43
1988	86.04	114.51	89.48	23.46	178.92	9.51
1989	88.52	93.27	93.21	25.27	170.79	9.41
1990	91.60	74.28	85.06	29.28	172.20	8.64
1991	87.70	60.88	85.86	25.08	227.24	7.66
1992	88.88	56.37	98.26	42.67	179.86	52.33
1993	95.36	79.00	101.07	44.71	150.19	91.50
1994	94.82	101.15	104.90	47.17	123.79	78.28
1995	102.91	103.57	107.34	58.81	116.15	95.51
1996	100.00	100.00	100.00	100.00	100.00	100.00
1997	105.21	106.18	107.48	113.54	98.35	96.37
1998	108.90	111.35	108.47	119.52	100.73	88.96
1999	110.95	115.32	101.46	127.95	109.55	86.81
2000	113.08	135.21	99.95	128.70	118.58	87.29
2001	107.39	127.20	89.42	128.77	127.74	29.40
2002	107.18	129.38	79.58	128.28	128.43	29.68
2003	98.17	127.97	76.47	129.45	128.01	92.41
2004	106.80	129.70	78.59	135.85	130.12	92.41
2005	102.63	125.58	80.54	142.12	130.97	92.41
2006	102.63	125.58	80.54	142.12	130.97	92.41
2007	104.88	125.01	80.91	155.41	129.19	101.58
2008	106.71	124.95	81.77	168.36	126.51	112.17
2009	109.12	125.53	81.53	180.68	123.67	124.58
2010	110.58	125.90	81.05	194.51	120.27	139.10

Source: Harvest estimation system (HES).

Table 9—Softwood harvest indexes (1996 = 100), North Central

Year	Sawlogs	Veneer	Pulpwood	Composites	Fuelwood	Misc. products
1965	54.55	488.20	63.15	1.27	0.60	154.03
1966	55.64	488.20	73.13	1.54	0.57	147.15
1967	57.42	488.20	62.47	1.94	0.54	127.09
1968	55.43	488.20	56.30	2.24	0.52	115.19
1969	66.01	488.20	61.38	5.05	0.49	121.67
1970	67.98	488.20	67.17	4.44	0.52	115.88
1971	65.55	330.09	61.93	4.47	0.50	121.54
1972	70.56	165.05	57.72	6.65	0.52	117.42
1973	78.84	165.05	54.86	7.62	0.50	125.49
1974	76.70	165.05	63.62	6.83	0.55	120.46
1975	75.13	165.05	59.71	5.43	0.53	119.50
1976	74.31	165.05	67.97	6.80	0.53	131.66
1977	85.61	165.05	63.52	8.22	0.65	136.50
1978	96.51	165.05	75.17	11.37	6.04	141.34
1979	95.37	165.05	79.11	10.68	22.92	149.51
1980	77.60	165.05	74.27	10.20	64.22	154.46
1981	59.65	160.24	76.85	17.70	77.97	159.41
1982	50.47	80.12	75.77	18.97	95.68	166.49
1983	65.04	80.12	65.80	38.23	102.71	172.42
1984	63.20	80.12	59.12	42.29	124.62	178.26
1985	73.92	80.12	65.81	47.65	129.91	187.68
1986	95.76	80.12	77.22	51.21	145.84	193.46
1987	108.69	80.12	74.52	50.74	120.10	185.62
1988	103.02	80.12	86.14	46.24	118.94	161.40
1989	97.65	80.12	87.68	34.89	127.43	150.55
1990	94.17	101.29	76.51	96.67	129.70	129.53
1991	88.09	102.94	83.88	99.11	126.78	105.80
1992	94.11	87.90	93.01	108.68	102.51	103.82
1993	94.30	83.16	103.06	108.19	101.71	98.73
1994	97.19	102.29	106.01	109.74	102.70	101.07
1995	104.53	104.70	96.21	102.47	114.84	105.18
1996	100.00	100.00	100.00	100.00	100.00	100.00
1997	103.10	97.90	99.21	94.50	85.69	96.95
1998	109.91	0.00	92.06	92.06	92.55	90.03
1999	114.85	0.00	78.18	95.83	89.19	88.38
2000	113.13	0.00	87.07	95.20	86.06	89.40
2001	126.93	0.00	91.32	89.50	83.05	153.65
2002	154.98	0.00	83.13	96.18	75.10	152.21
2003	156.29	0.00	89.33	92.61	74.85	95.20
2004	166.43	0.00	91.50	98.35	76.09	95.20
2005	171.62	0.00	93.28	99.18	76.58	95.20
2006	171.62	0.00	93.28	99.18	76.58	95.20
2007	179.02	0.00	94.55	101.39	73.51	93.68
2008	187.31	0.00	96.36	103.33	69.87	91.97
2009	195.18	0.00	97.87	104.89	66.13	90.03
2010	201.80	0.00	98.83	106.22	62.13	87.93

Source: Harvest estimation system (HES).

Table 10—Hardwood harvest indexes (1996 = 100), North Central

Year	Sawlogs	Veneer logs	Pulp-wood	Composites	Fuel-wood	Misc. products
1965	47.99	158.21	24.78	—	27.97	96.93
1966	48.83	168.25	29.85	—	27.31	96.46
1967	49.10	133.40	27.66	—	27.24	88.90
1968	46.62	170.63	23.41	—	27.29	91.67
1969	47.43	146.13	29.07	—	26.59	110.90
1970	46.45	139.55	22.42	—	30.09	126.31
1971	47.63	111.86	33.27	—	31.49	116.25
1972	46.93	118.89	33.03	—	34.71	100.85
1973	51.64	107.27	35.92	—	34.74	95.73
1974	47.32	87.63	47.69	—	41.09	83.16
1975	44.42	106.24	34.25	—	41.34	74.25
1976	49.76	79.88	40.93	—	42.47	68.43
1977	53.87	64.90	40.16	—	54.01	78.12
1978	55.98	73.13	38.89	—	73.46	88.41
1979	55.76	97.31	44.63	—	86.72	95.69
1980	53.89	91.21	38.45	—	100.06	107.02
1981	45.44	85.53	45.37	—	107.75	118.95
1982	61.12	124.72	38.42	—	155.25	129.06
1983	72.17	108.58	59.16	31.72	148.68	141.02
1984	82.61	112.17	59.76	36.99	158.67	153.68
1985	77.70	101.25	79.64	48.16	150.96	162.89
1986	80.61	105.06	106.60	50.00	153.83	176.75
1987	85.22	116.39	99.04	51.93	132.65	172.99
1988	91.39	118.40	97.46	66.44	133.12	187.98
1989	95.31	97.20	94.63	75.42	130.19	201.53
1990	98.32	76.95	102.77	78.90	134.12	200.06
1991	92.51	62.73	106.43	72.92	181.62	192.50
1992	90.44	57.76	106.24	102.41	145.83	197.94
1993	99.40	80.71	104.75	105.68	128.95	186.58
1994	102.05	101.59	109.89	107.57	118.09	134.53
1995	102.32	103.35	103.47	101.46	117.63	120.97
1996	100.00	100.00	100.00	100.00	100.00	100.00
1997	101.99	104.75	101.86	97.71	88.76	97.84
1998	101.34	109.97	98.27	102.41	82.90	91.67
1999	97.48	113.05	93.30	105.91	82.91	90.78
2000	93.22	126.96	99.77	104.83	83.13	92.61
2001	87.01	117.91	99.61	106.89	83.46	31.64
2002	87.14	117.32	106.52	114.62	78.61	31.94
2003	80.56	117.12	103.41	115.64	78.35	99.46
2004	86.79	117.56	105.40	121.37	79.64	99.46
2005	84.98	115.98	108.08	126.95	80.16	99.46
2006	84.98	115.98	108.08	126.95	80.16	99.46
2007	85.54	115.56	110.54	133.87	77.17	103.42
2008	85.66	114.97	113.12	140.67	73.95	107.35
2009	86.01	114.89	114.64	146.70	70.90	111.34
2010	86.25	114.62	114.99	153.03	67.79	115.28

Source: Harvest estimation system (HES).

Table 11—Softwood harvest indexes (1996 = 100), Rocky Mountain North

Year	Sawlogs	Veneer logs	Pulp-wood	Fuel-wood	Misc. products
1965	73.97	46.10	—	14.20	85.04
1966	76.02	54.05	—	16.95	93.24
1967	74.38	69.20	—	20.35	90.13
1968	78.55	66.93	—	24.08	93.35
1969	74.24	58.81	—	27.07	120.46
1970	71.11	57.04	—	36.70	136.42
1971	77.89	70.08	—	34.00	126.66
1972	77.12	74.31	—	33.98	110.96
1973	82.83	72.29	—	31.38	106.05
1974	71.28	70.32	—	33.38	93.33
1975	69.54	76.94	—	31.06	84.74
1976	79.12	92.70	—	29.45	84.20
1977	82.24	95.37	—	25.97	92.04
1978	81.75	93.22	—	49.51	99.89
1979	80.78	89.12	—	84.56	110.40
1980	65.20	80.58	—	136.09	118.44
1981	63.55	80.42	—	137.23	126.48
1982	58.30	66.24	—	141.82	136.37
1983	95.26	92.13	—	134.11	145.35
1984	98.82	84.84	—	140.84	154.27
1985	100.63	89.21	—	132.25	166.56
1986	112.19	87.72	—	132.70	175.57
1987	119.35	101.41	—	111.74	172.75
1988	117.12	97.60	—	110.66	154.10
1989	121.62	105.17	—	118.56	149.49
1990	115.28	103.52	48.65	118.68	134.46
1991	108.86	92.49	47.48	123.60	116.23
1992	113.40	105.22	46.15	143.76	111.30
1993	109.14	108.03	29.78	159.38	103.79
1994	104.74	92.89	28.11	179.67	104.30
1995	96.09	105.44	127.72	200.99	106.87
1996	100.00	100.00	100.00	100.00	100.00
1997	102.70	99.20	77.07	95.38	97.98
1998	106.71	93.64	96.43	103.61	91.94
1999	109.37	98.61	69.15	104.10	91.18
2000	100.40	87.86	79.60	104.81	93.14
2001	106.00	66.51	61.83	91.36	136.70
2002	110.77	65.18	49.61	87.23	135.42
2003	110.16	63.16	52.58	87.27	84.70
2004	124.01	59.52	53.44	37.91	158.67
2005	125.05	56.59	54.56	44.07	144.27
2006	125.05	56.59	54.56	43.37	144.27
2007	125.72	56.31	62.75	42.04	143.49
2008	126.23	56.19	71.48	40.73	142.33
2009	126.66	55.97	82.38	39.44	140.66
2010	126.55	55.74	91.01	38.32	138.63

Source: Harvest estimation system (HES).

Table 12—Hardwood harvest indexes (1996 = 100), Rocky Mountain North

Year	Composites	Fuel-wood
1965	68.77	0.29
1966	68.77	0.44
1967	68.77	0.61
1968	68.77	0.79
1969	68.77	0.95
1970	68.77	1.39
1971	68.77	1.37
1972	68.77	1.41
1973	68.77	1.35
1974	68.77	1.49
1975	68.77	1.44
1976	68.77	1.41
1977	68.77	5.47
1978	68.77	15.69
1979	68.77	27.29
1980	68.77	42.08
1981	68.77	55.79
1982	68.77	109.41
1983	68.77	118.27
1984	68.77	144.53
1985	51.34	151.34
1986	57.22	170.63
1987	73.33	139.39
1988	120.99	129.34
1989	89.06	116.91
1990	85.06	119.16
1991	89.99	104.17
1992	86.41	94.83
1993	80.35	85.69
1994	105.46	74.69
1995	100.00	64.35
1996	100.00	100.01
1997	—	93.89
1998	—	93.71
1999	—	96.21
2000	—	98.88
2001	—	97.80
2002	—	96.15
2003	—	96.97
2004	—	97.98
2005	—	98.24
2006	—	99.38
2007	—	100.89
2008	—	102.06
2009	—	102.91
2010	—	104.20

Table 13—Softwood harvest indexes (1996 = 100), Rocky Mountain South

Year	Sawlogs	Pulp-wood	Fuel-wood	Misc. products
1965	135.50	—	9.72	123.74
1966	143.38	—	10.95	127.38
1967	148.28	—	12.53	117.42
1968	160.13	—	14.29	115.43
1969	151.49	—	15.61	138.42
1970	144.42	—	20.48	148.09
1971	146.91	—	19.43	135.37
1972	153.51	—	19.97	116.85
1973	141.36	—	18.91	109.57
1974	127.46	—	20.83	94.79
1975	125.70	—	19.92	84.37
1976	148.94	—	19.45	81.69
1977	157.94	—	17.16	89.31
1978	142.67	—	32.70	96.92
1979	135.49	—	55.85	107.12
1980	121.08	—	89.88	114.92
1981	118.83	—	90.63	122.72
1982	103.51	—	93.66	132.32
1983	129.55	—	88.57	141.03
1984	138.11	—	93.01	149.68
1985	138.11	—	89.17	161.61
1986	167.09	35.06	89.36	170.35
1987	172.98	89.46	84.12	167.62
1988	173.32	155.99	83.90	149.52
1989	177.22	98.07	85.64	145.05
1990	159.95	65.70	86.04	130.46
1991	145.54	65.67	91.05	112.77
1992	133.28	64.42	85.45	107.99
1993	116.85	41.32	93.06	106.08
1994	123.55	38.61	99.19	106.20
1995	105.47	120.70	110.69	106.82
1996	100.00	100.00	100.00	100.00
1997	104.30	76.27	89.11	97.98
1998	102.74	95.23	100.19	91.94
1999	105.41	67.58	100.60	91.17
2000	90.45	78.40	95.27	94.02
2001	65.94	60.81	96.00	163.18
2002	106.55	48.92	87.54	147.17
2003	0.00	52.90	87.25	92.06
2004	0.00	54.18	88.69	92.06
2005	70.88	55.22	97.13	110.72
2006	70.88	55.22	97.13	110.72
2007	65.63	56.21	94.33	110.12
2008	60.38	56.59	91.30	109.22
2009	55.34	57.54	88.50	107.95
2010	50.10	56.13	87.19	117.85

Source: Harvest estimation system (HES).

Table 14—Hardwood harvest indexes (1996 = 100), Rocky Mountain South

Year	Sawlogs	Fuel-wood	Misc. products
1965	3.39	1.76	—
1966	—	2.38	—
1967	—	3.11	—
1968	—	3.92	—
1969	—	4.60	—
1970	—	6.53	—
1971	—	5.58	—
1972	—	4.81	—
1973	—	3.80	—
1974	—	3.10	—
1975	—	2.16	—
1976	—	1.27	—
1977	—	4.93	—
1978	327.09	14.15	—
1979	336.01	24.60	—
1980	352.05	37.93	—
1981	197.84	50.29	—
1982	552.12	98.63	—
1983	295.22	106.62	—
1984	295.46	130.29	—
1985	440.94	133.28	—
1986	292.01	142.39	—
1987	196.70	135.42	—
1988	100.00	134.26	—
1989	100.00	133.89	—
1990	100.00	134.33	—
1991	100.00	134.21	—
1992	100.00	135.64	54.24
1993	100.00	124.31	88.98
1994	100.00	114.21	78.66
1995	100.00	97.02	94.79
1996	100.00	100.00	100.00
1997	100.00	91.20	84.72
1998	100.00	87.43	67.42
1999	100.00	89.68	55.24
2000	100.00	92.14	44.91
2001	100.00	94.71	11.54
2002	100.00	91.27	11.65
2003	100.00	90.97	36.26
2004	100.00	92.47	36.26
2005	100.00	93.07	36.26
2006	100.00	93.07	36.26
2007	92.72	94.88	41.34
2008	85.67	96.06	47.27
2009	77.63	97.11	54.26
2010	71.77	97.75	62.48

Source: Harvest estimation system (HES).

Table 15—Softwood harvest indexes (1996 = 100), Pacific Southwest

Year	Sawlogs	Veneer logs	Fuel-wood	Misc. products
1965	106.77	1340.49	—	50.01
1966	105.92	1216.41	—	63.71
1967	103.44	987.35	—	67.55
1968	113.42	1018.94	—	76.40
1969	105.41	974.13	—	110.15
1970	98.60	933.57	—	134.46
1971	107.76	1251.44	—	112.77
1972	113.32	1369.34	—	88.78
1973	115.70	1263.14	—	72.58
1974	100.73	1130.61	—	54.03
1975	93.45	915.90	—	38.59
1976	106.21	870.04	—	25.24
1977	111.33	801.88	—	40.38
1978	107.78	745.24	—	55.51
1979	103.53	688.13	—	72.99
1980	87.81	518.95	—	88.63
1981	75.70	564.07	—	104.26
1982	70.88	395.56	9.32	121.80
1983	87.83	592.16	10.28	138.57
1984	96.52	530.14	12.82	155.36
1985	104.12	401.92	13.58	176.10
1986	124.55	321.54	15.49	193.28
1987	139.78	279.84	14.74	198.99
1988	147.76	369.67	14.60	185.24
1989	139.27	289.48	15.64	191.02
1990	132.13	216.03	15.92	182.90
1991	114.30	194.80	143.31	169.66
1992	107.02	200.00	118.69	146.27
1993	96.33	100.00	104.77	123.60
1994	95.57	100.00	96.16	110.84
1995	92.51	100.00	110.56	121.80
1996	100.00	100.00	100.00	100.00
1997	105.60	100.00	89.30	103.51
1998	122.18	100.00	100.61	102.16
1999	118.88	100.00	101.22	106.16
2000	71.72	90.54	172.73	8.03
2001	76.67	90.54	174.38	14.51
2002	69.01	90.54	165.17	14.38
2003	72.11	90.54	164.63	8.99
2004	62.88	79.38	167.43	12.05
2005	60.86	76.82	166.14	9.23
2006	68.89	76.82	166.14	9.23
2007	63.24	69.16	170.66	9.23
2008	69.63	62.32	174.04	9.18
2009	76.03	56.76	177.20	9.08
2010	70.03	52.08	179.61	8.95

Source: Harvest estimation system (HES).

Table 16—Hardwood harvest indexes (1996 = 100), Pacific Southwest

Year	Veneer logs	Fuel-wood
1965	16.88	6.90
1966	15.88	8.54
1967	19.25	10.53
1968	20.95	12.71
1969	18.29	14.50
1970	19.07	19.97
1971	24.69	19.69
1972	26.36	20.42
1973	23.85	19.47
1974	19.19	21.65
1975	13.95	20.85
1976	14.75	20.52
1977	16.75	27.77
1978	16.67	40.41
1979	15.96	50.23
1980	15.39	60.81
1981	15.50	68.23
1982	27.89	105.02
1983	28.72	103.73
1984	29.93	114.91
1985	26.57	112.53
1986	29.86	118.46
1987	36.77	105.04
1988	44.58	109.32
1989	64.88	110.45
1990	90.34	117.91
1991	88.72	170.34
1992	86.71	140.51
1993	84.44	123.45
1994	101.02	112.74
1995	101.25	111.20
1996	100.00	100.00
1997	108.29	97.09
1998	114.11	98.38
1999	117.08	106.04
2000	138.17	113.91
2001	132.73	121.90
2002	136.25	121.87
2003	131.67	121.47
2004	136.62	123.47
2005	129.23	124.27
2006	129.23	124.27
2007	136.77	124.88
2008	144.87	124.99
2009	154.60	125.21
2010	164.71	125.18

Source: Harvest estimation system (HES).

Table 17—Softwood harvest indexes (1996 = 100), Pacific Northwest

Year	Sawlogs	Veneer logs	Pulpwood	Fuelwood	Misc. products
1965	79.70	113.68	—	9.68	113.41
1966	77.24	110.03	—	9.83	125.01
1967	76.41	107.49	—	10.22	121.29
1968	81.68	130.52	—	10.67	126.11
1969	76.73	116.43	—	10.83	163.57
1970	76.37	121.30	—	12.95	185.94
1971	79.19	132.65	—	12.13	171.52
1972	88.55	157.09	—	12.28	149.34
1973	90.06	159.96	—	11.47	141.63
1974	79.91	136.62	—	12.40	123.78
1975	78.46	134.97	—	11.69	111.50
1976	86.00	166.59	—	11.24	109.66
1977	90.17	164.39	—	10.78	106.79
1978	95.34	175.76	—	28.39	103.92
1979	95.92	175.28	78.59	62.45	103.08
1980	78.89	140.93	66.06	124.75	100.16
1981	74.06	124.99	46.67	137.45	97.23
1982	73.94	125.05	46.85	155.26	95.38
1983	102.40	162.85	42.63	157.56	92.86
1984	106.16	163.81	52.14	180.07	90.24
1985	106.31	167.60	79.58	180.38	89.08
1986	120.71	186.79	85.78	194.53	86.27
1987	134.96	196.34	97.56	161.25	98.50
1988	135.35	193.68	95.24	159.70	99.78
1989	131.93	165.84	144.82	171.09	114.53
1990	116.68	145.83	126.60	174.15	120.43
1991	105.51	123.20	118.49	179.53	122.19
1992	103.28	116.80	104.67	146.58	115.62
1993	94.29	104.92	98.99	127.24	106.74
1994	95.24	101.31	103.92	114.67	106.16
1995	95.52	101.54	118.84	112.25	107.38
1996	100.00	100.00	100.00	100.00	100.00
1997	100.19	85.65	102.04	87.33	96.01
1998	98.97	83.04	120.23	96.21	88.30
1999	102.60	85.29	100.22	94.65	85.84
2000	102.53	87.74	101.63	93.33	85.98
2001	104.37	80.53	78.73	92.13	146.34
2002	118.42	68.56	60.60	109.15	24.50
2003	120.59	89.60	48.36	130.51	28.76
2004	131.31	97.66	53.29	134.75	31.43
2005	131.95	95.52	54.49	135.17	30.96
2006	131.95	95.52	54.49	135.17	30.96
2007	132.41	91.85	55.00	130.50	31.25
2008	132.68	88.13	55.11	125.08	31.61
2009	132.96	84.33	54.39	119.65	32.00
2010	132.56	80.15	53.49	113.86	32.46

Source: Harvest estimation system (HES).

Table 18—Hardwood harvest indexes (1996 = 100), Pacific Northwest

Year	Sawlogs	Veneer logs	Pulp-wood	Fuel-wood
1965	10.43	20.39	5.02	1.84
1966	14.46	19.13	5.16	2.17
1967	13.99	23.18	4.34	2.58
1968	14.85	25.44	8.02	3.03
1969	12.07	22.06	8.47	3.39
1970	9.83	23.03	9.06	4.56
1971	11.32	28.95	7.73	4.48
1972	11.00	30.68	9.04	4.62
1973	12.43	27.67	14.35	4.39
1974	14.99	22.61	21.84	4.86
1975	12.10	16.19	18.15	4.66
1976	15.74	16.79	27.61	4.57
1977	15.78	19.09	24.37	—
1978	16.94	18.03	20.95	5.94
1979	17.65	17.01	24.67	17.43
1980	27.32	17.82	26.02	33.65
1981	26.17	17.72	24.71	49.88
1982	36.42	32.31	23.44	112.90
1983	27.41	33.86	17.08	127.12
1984	27.89	35.10	33.80	161.58
1985	27.62	31.58	35.12	173.26
1986	37.63	33.14	35.91	199.76
1987	41.00	37.57	38.66	167.52
1988	47.85	40.47	44.66	161.68
1989	55.18	61.10	35.26	152.29
1990	64.27	79.19	96.56	150.62
1991	72.74	101.34	125.08	192.48
1992	74.10	88.30	132.09	154.62
1993	97.88	86.39	108.19	131.59
1994	97.25	104.36	119.51	115.94
1995	97.11	103.25	116.34	115.38
1996	100.00	100.00	99.99	100.00
1997	102.54	106.03	96.30	100.34
1998	89.70	111.73	108.01	104.42
1999	100.58	115.14	103.00	115.07
2000	104.79	133.09	93.82	125.93
2001	101.17	124.77	77.65	136.91
2002	101.38	126.16	76.88	138.76
2003	92.76	124.66	64.35	138.30
2004	100.91	126.33	74.00	140.58
2005	97.83	123.40	75.20	141.49
2006	97.83	123.40	75.20	141.49
2007	102.82	129.63	78.27	141.24
2008	108.23	136.25	79.93	139.67
2009	114.21	144.17	81.55	137.64
2010	119.47	152.63	83.21	134.76

Source: Harvest estimation system (HES).

Table 19—Volume of roundwood products by region, state, species group, and type of product, United States, 2005

Region, state, and species group	Roundwood products												
	Saw logs		Veneer logs		Pulpwood		Composite products		Fuelwood		Posts, poles, pilings	Other products	All products
	MBF[a]	MCF[b]	MBF	MCF	Cords	MCF	Cords	MCF	Cords	MCF	MCF	MCF	MCF
Northeast													
Connecticut													
Softwood	27,434	4,343	0	0	1,848	157	0	0	596	48	0	35	4,583
Hardwood	47,044	7,180	0	0	10	1	0	0	274,544	21,963	0	0	29,144
Total	74,478	11,523	0	0	1,858	158	0	0	275,140	22,011	0	35	33,727
Delaware													
Softwood	3,313	525	2	0	31,697	2,694	0	0	2,211	177	0	68	3,464
Hardwood	17,399	2,655	908	138	7,934	674	0	0	15,963	1,277	0	50	4,794
Total	20,712	3,180	910	138	39,631	3,368	0	0	18,174	1,454	0	118	8,258
Maine													
Softwood	1,268,859	200,863	20	3	898,597	76,381	0	0	73,540	5,883	0	761	283,891
Hardwood	317,097	48,463	31,008	4,727	1,353,558	115,052	0	0	919,715	73,578	0	612	242,432
Total	1,585,956	249,326	31,029	4,730	2,252,154	191,433	0	0	993,254	79,461	0	1,373	526,322
Maryland													
Softwood	48,082	7,612	0	0	65,214	5,543	0	0	26,509	2,120	0	407	15,682
Hardwood	95,810	14,629	1,610	10,560	70,813	6,019	0	0	382,500	30,600	0	55	61,863
Total	143,892	22,241	1,610	10,560	136,027	11,562	0	0	409,009	32,721	0	462	77,545
Massachusettes													
Softwood	68,723	10,879	0	0	7,347	625	0	0	245,468	19,637	0	88	31,229
Hardwood	31,931	4,874	0	0	991	85	0	0	385,410	30,833	0	5	35,796
Total	100,654	15,753	0	0	8,338	709	0	0	630,878	50,471	0	93	67,026
New Hampshire													
Softwood	252,220	39,925	29	5	155,847	13,247	0	0	26,068	2,086	0	1,557	56,819
Hardwood	270,983	41,359	99,949	15,237	287,584	24,445	0	0	336,977	26,958	0	8,104	116,102
Total	523,204	81,284	99,978	15,241	443,431	37,692	0	0	363,045	29,044	0	9,660	172,921
New Jersey													
Softwood	1,988	314	0	0	3,646	310	0	0	5,089	407	0	73	1,104
Hardwood	17,778	2,714	2,674	408	515	43	0	0	476,637	38,131	0	14	41,310
Total	19,767	3,028	2,674	408	4,162	353	0	0	481,725	38,537	0	87	42,414
New York													
Softwood	178,021	28,181	9,925	1,572	201,371	17,116	3,117	266	0	0	0	556	47,691
Hardwood	433,670	66,189	11,644	1,774	235,337	20,004	32,433	2,757	751,553	601,166	0	5	691,895
Total	611,691	94,369	21,569	3,347	436,708	37,120	35,550	3,023	751,553	601,166	0	561	739,586
Pennsylvania													
Softwood	53,593	8,484	55	9	46,188	3,926	0	0	845	68	0	9,600	22,087
Hardwood	895,188	136,627	32,592	4,968	567,310	48,221	0	0	147,015	11,762	0	2,933	204,512
Total	948,781	145,111	32,647	4,977	613,498	52,147	0	0	147,860	11,830	0	12,533	226,599

Table 19—Volume of roundwood products by region, state, species group, and type of product, United States, 2005 *(continued)*

Region, state, and species group	Roundwood products												
	Saw logs		Veneer logs		Pulpwood		Composite products		Fuelwood		Posts, poles, pilings	Other products	All products
	MBF[a]	MCF[b]	MBF	MCF	Cords	MCF	Cords	MCF	Cords	MCF	MCF	MCF	MCF
Rhode Island													
Softwood	2,737	433	0	0	2,704	230	0	0	412	33	0	0	696
Hardwood	3,398	518	0	0	0	0	0	0	50,288	4,218	0	0	4,737
Total	6,135	951	0	0	2,704	230	0	0	50,701	4,251	0	0	5,432
Vermont													
Softwood	226,769	35,898	4,951	785	126,898	10,786	0	0	224	18	0	90	47,577
Hardwood	112,146	17,117	5,076	774	170,445	14,488	0	0	373,280	29,863	0	0	62,241
Total	338,915	53,014	10,026	1,558	297,343	25,274	0	0	373,504	29,881	0	90	109,818
West Virginia													
Softwood	22,651	3,586	0	0	33,769	2,871	0	0	1,709	137	0	209	6,802
Hardwood	815,366	124,444	53,683	8,184	238,202	20,247	0	0	44,582	3,568	0	4,478	160,921
Total	838,017	128,030	53,683	8,184	271,971	23,118	0	0	46,291	3,705	0	4,687	167,723
All Northeast States													
Softwood	2,154,392	341,043	14,982	2,374	1,575,128	133,886	3,117	266	382,671	30,614	0	13,444	521,625
Hardwood	3,057,809	466,767	239,143	46,770	2,932,698	249,280	32,433	2,757	4,158,463	873,917	0	16,255	1,655,746
Total	5,212,201	807,810	254,125	49,143	4,507,826	383,166	35,550	3,023	4,541,134	904,531	0	29,698	2,177,371
North Central													
Illinois													
Softwood	578	103	0	0	3,873	306	0	0	2,755	193	0	17	619
Hardwood	183,304	30,576	6,187	851	40,337	3,186	0	0	672,225	47,055	0	2,819	84,487
Total	183,883	30,679	6,187	851	44,209	3,492	0	0	674,981	47,248	0	2,836	85,106
Indiana													
Softwood	9,305	1,660	0	0	11,831	935	0	0	6,263	438	0	34	3,067
Hardwood	289,015	48,135	26,537	3,639	51,864	4,097	0	0	412,414	28,869	0	577	85,318
Total	298,319	49,795	26,537	3,639	63,695	5,032	0	0	418,677	29,307	0	611	88,385
Iowa													
Softwood	150	31	0	0	0	0	0	0	520	37	0	56	124
Hardwood	73,217	12,296	2,796	571	11,130	880	0	0	274,043	19,183	0	178	33,108
Total	73,367	12,327	2,796	571	11,130	880	0	0	274,562	19,220	0	234	33,231
Kansas													
Softwood	153	33	0	0	0	0	0	0	2,174	152	0	1	185
Hardwood	11,208	1,820	117	16	0	0	0	0	230,237	16,117	0	526	18,480
Total	11,361	1,853	117	16	0	0	0	0	232,411	16,269	0	527	18,665
Michigan													
Softwood	245,421	42,247	0	0	418,123	35,877	113,397	8,958	135,932	9,504	0	3,784	100,370
Hardwood	429,221	73,882	57,056	9,289	2,274,814	133,616	847,943	66,988	797,919	55,833	0	751	340,358
Total	674,642	116,129	57,056	9,289	2,692,937	169,493	961,341	75,946	933,851	65,337	0	4,535	440,729
Minnesota													
Softwood	212,815	40,163	0	0	645,802	41,833	16,758	1,315	20,335	1,424	0	2,044	86,779
Hardwood	161,949	28,644	20,782	3,383	2,943,103	89,791	1,590,859	125,212	621,613	43,513	0	1,522	292,066
Total	374,765	68,808	20,782	3,383	3,588,905	131,624	1,607,617	126,527	641,949	44,937	0	3,566	378,845

Missouri													
Softwood	84,262	16,122	55	0	11	146	0	0	3,305	231	0	2,670	19,169
Hardwood	537,677	94,470	5,654	1,265	4,683	59,285	0	0	433,712	30,360	0	7,197	192,577
Total	621,939	110,592	5,709	1,265	4,694	59,431	0	0	437,018	30,591	0	9,867	211,746
Nebraska													
Softwood	31,117	5,430	0	0	0	0	0	0	5,071	355	0	204	5,989
Hardwood	24,068	3,735	335	76	0	0	0	0	118,295	8,280	0	149	12,240
Total	55,185	9,165	335	76	0	0	0	0	123,367	8,635	0	352	18,229
NorthDakota													
Softwood	9	2	0	0	0	0	0	0	1,150	80	0	4	86
Hardwood	2,214	389	0	0	0	0	2,959	222	23,132	1,619	0	17	2,247
Total	2,222	391	0	0	0	0	2,959	222	24,283	1,699	0	21	2,333
Ohio													
Softwood	6,046	958	0	0	22,106	1,880	0	0	0	0	0	907	3,744
Hardwood	296,065	45,187	17,852	2,721	501,971	42,668	0	0	143,039	11,443	0	656	102,675
Total	302,110	46,144	17,852	2,721	524,077	44,548	0	0	143,039	11,443	0	1,564	106,420
South Dakota													
Softwood	109,773	17,901	0	0	0	0	10,712	803	9,030	632	0	20	19,356
Hardwood	859	151	0	0	0	0	0	0	39,837	2,789	0	46	2,986
Total	110,632	18,052	0	0	0	0	10,712	803	48,867	3,420	0	66	22,342
Wisconsin													
Softwood	176,636	31,219	0	0	774,922	63,439	14,548	1,148	39,103	2,738	0	1,367	99,910
Hardwood	459,532	80,338	57,533	9,367	2,295,004	137,288	586,305	46,319	734,757	51,433	0	3,767	328,512
Total	636,169	111,557	57,533	9,367	3,069,926	200,727	600,853	47,467	773,860	54,170	0	5,134	428,422
All North Central States													
Softwood	876,265	155,868	55	0	1,876,669	144,415	155,414	12,224	225,640	15,783	0	11,108	339,399
Hardwood	2,468,330	419,624	194,849	31,180	8,122,906	470,811	3,028,067	238,742	4,501,225	316,494	0	18,204	1,495,054
Total	3,344,594	575,492	194,904	31,180	9,999,574	615,226	3,183,481	250,966	4,726,865	332,278	0	29,312	1,834,453
Southeast													
Florida													
Softwood	965,278	184,383	172,738	29,689	2,668,200	240,598	20,597	1,458	42,382	3,094	0	26,746	485,968
Hardwood	28,152	4,717	8,915	1,429	266,500	28,321	93,858	7,037	239,486	17,962	0	879	60,345
Total	993,430	189,100	181,653	31,118	2,934,700	268,920	114,455	8,495	281,868	21,055	0	27,625	546,312
Georgia													
Softwood	2,277,332	416,766	324,698	55,485	6,102,600	441,991	687,275	49,874	94,018	6,821	0	26,264	997,201
Hardwood	412,957	69,307	70,315	11,420	1,135,400	115,369	34,900	2,600	596,589	44,744	0	335	243,776
Total	2,690,289	486,073	395,014	66,906	7,238,000	557,360	722,175	52,475	690,607	51,565	0	26,599	1,240,977
North Carolina													
Softwood	1,761,854	317,151	223,834	38,927	1,796,400	146,052	688,396	49,952	123,953	8,993	0	929	562,004
Hardwood	719,663	119,417	103,814	16,476	1,778,600	110,188	108,177	8,268	983,666	75,381	0	0	329,730
Total	2,481,517	436,568	327,649	55,403	3,575,000	256,240	796,573	58,220	1,107,619	84,374	0	929	891,734

Table 19—Volume of roundwood products by region, state, species group, and type of product, United States, 2005 ***(continued)***

Region, state, and species group	Roundwood products												
	Saw logs		Veneer logs		Pulpwood		Composite products		Fuelwood		Posts, poles, pilings	Other products	All products
	MBF[a]	MCF[b]	MBF	MCF	Cords	MCF	Cords	MCF	Cords	MCF	MCF	MCF	MCF
Missouri													
Softwood	84,262	16,122	55	0	11	146	0	0	3,305	231	0	2,670	19,169
Hardwood	537,677	94,470	5,654	1,265	4,683	59,285	0	0	433,712	30,360	0	7,197	192,577
Total	621,939	110,592	5,709	1,265	4,694	59,431	0	0	437,018	30,591	0	9,867	211,746
Nebraska													
Softwood	31,117	5,430	0	0	0	0	0	0	5,071	355	0	204	5,989
Hardwood	24,068	3,735	335	76	0	0	0	0	118,295	8,280	0	149	12,240
Total	55,185	9,165	335	76	0	0	0	0	123,367	8,635	0	352	18,229
NorthDakota													
Softwood	9	2	0	0	0	0	0	0	1,150	80	0	4	86
Hardwood	2,214	389	0	0	0	0	2,959	222	23,132	1,619	0	17	2,247
Total	2,222	391	0	0	0	0	2,959	222	24,283	1,699	0	21	2,333
Ohio													
Softwood	6,046	958	0	0	22,106	1,880	0	0	0	0	0	907	3,744
Hardwood	296,065	45,187	17,852	2,721	501,971	42,668	0	0	143,039	11,443	0	656	102,675
Total	302,110	46,144	17,852	2,721	524,077	44,548	0	0	143,039	11,443	0	1,564	106,420
South Dakota													
Softwood	109,773	17,901	0	0	0	0	10,712	803	9,030	632	0	20	19,356
Hardwood	859	151	0	0	0	0	0	0	39,837	2,789	0	46	2,986
Total	110,632	18,052	0	0	0	0	10,712	803	48,867	3,420	0	66	22,342
Wisconsin													
Softwood	176,636	31,219	0	0	774,922	63,439	14,548	1,148	39,103	2,738	0	1,367	99,910
Hardwood	459,532	80,338	57,533	9,367	2,295,004	137,288	586,305	46,319	734,757	51,433	0	3,767	328,512
Total	636,169	111,557	57,533	9,367	3,069,926	200,727	600,853	47,467	773,860	54,170	0	5,134	428,422
All North Central States													
Softwood	876,265	155,868	55	0	1,876,669	144,415	155,414	12,224	225,640	15,783	0	11,108	339,399
Hardwood	2,468,330	419,624	194,849	31,180	8,122,906	470,811	3,028,067	238,742	4,501,225	316,494	0	18,204	1,495,054
Total	3,344,594	575,492	194,904	31,180	9,999,574	615,226	3,183,481	250,966	4,726,865	332,278	0	29,312	1,834,453
Southeast													
Florida													
Softwood	965,278	184,383	172,738	29,689	2,668,200	240,598	20,597	1,458	42,382	3,094	0	26,746	485,968
Hardwood	28,152	4,717	8,915	1,429	266,500	28,321	93,858	7,037	239,486	17,962	0	879	60,345
Total	993,430	189,100	181,653	31,118	2,934,700	268,920	114,455	8,495	281,868	21,055	0	27,625	546,312
Georgia													
Softwood	2,277,332	416,766	324,698	55,485	6,102,600	441,991	687,275	49,874	94,018	6,821	0	26,264	997,201
Hardwood	412,957	69,307	70,315	11,420	1,135,400	115,369	34,900	2,600	596,589	44,744	0	335	243,776
Total	2,690,289	486,073	395,014	66,906	7,238,000	557,360	722,175	52,475	690,607	51,565	0	26,599	1,240,977
North Carolina													
Softwood	1,761,854	317,151	223,834	38,927	1,796,400	146,052	688,396	49,952	123,953	8,993	0	929	562,004
Hardwood	719,663	119,417	103,814	16,476	1,778,600	110,188	108,177	8,268	983,666	75,381	0	0	329,730
Total	2,481,517	436,568	327,649	55,403	3,575,000	256,240	796,573	58,220	1,107,619	84,374	0	929	891,734

South Carolina													
Softwood	1,278,841	230,218	192,497	33,865	3,344,400	211,499	286,444	19,643	50,216	3,445	0	3,753	502,423
Hardwood	172,713	28,998	42,536	6,917	1,152,100	76,693	909	62	368,862	27,074	0	0	139,744
Total	1,451,555	259,216	235,033	40,782	4,496,500	288,193	287,353	19,704	419,078	30,519	0	3,753	642,167
Virginia													
Softwood	708,775	119,898	67,900	8,180	1,285,800	86,095	668,762	49,007	121,038	4,803	0	1,443	269,426
Hardwood	775,587	128,337	23,887	8,398	1,351,300	102,464	132,077	10,033	751,896	43,037	0	429	292,698
Total	1,484,362	248,234	91,787	16,578	2,637,100	188,559	800,839	59,040	872,935	47,840	0	1,872	562,124
All Southeast states													
Softwood	6,992,079	1,268,415	981,668	166,147	15,197,400	1,126,235	2,351,474	169,934	431,607	27,156	0	59,135	2,817,022
Hardwood	2,109,073	350,776	249,467	44,640	5,683,900	433,036	369,921	28,000	2,940,499	208,198	0	1,643	1,066,293
Total	9,101,152	1,619,191	1,231,136	210,786	20,881,300	1,559,271	2,721,395	197,934	3,372,107	235,354	0	60,778	3,883,315
South Central													
Alabama													
Softwood	2,071,227	372,789	482,796	82,537	5,129,765	364,182	0	0	41,030	2,913	0	43,386	865,807
Hardwood	437,834	73,525	138,676	22,585	2,794,263	209,528	0	0	251,012	18,669	0	1,138	325,445
Total	2,509,061	446,314	621,472	105,122	7,924,028	573,711	0	0	292,043	21,581	0	44,524	1,191,252
Arkansas													
Softwood	1,558,463	280,497	501,651	87,275	1,767,000	142,879	410,827	29,817	382,593	27,768	0	3,045	571,280
Hardwood	575,141	95,436	30,639	4,857	1,350,100	91,761	2,716	206	2,527	191	0	41	192,491
Total	2,133,604	375,933	532,290	92,132	3,117,100	234,639	413,543	30,023	385,120	27,959	0	3,086	763,772
Kentucky													
Softwood	28,028	5,157	510	86	56,900	3,343	0	0	946	69	0	2,571	11,225
Hardwood	916,070	150,176	33,301	5,308	263,200	21,382	0	0	261,551	19,904	0	11,563	208,333
Total	944,099	155,333	33,811	5,393	320,100	24,726	0	0	262,497	19,973	0	14,134	219,558
Louisiana													
Softwood	1,340,149	255,947	774,701	133,232	3,532,000	203,277	369,351	26,216	22,548	1,601	0	7,506	627,779
Hardwood	270,217	45,373	3,989	641	1,094,600	88,177	178,666	13,390	263,307	19,748	0	0	167,329
Total	1,610,365	301,320	778,690	133,873	4,626,600	291,454	548,017	39,606	285,855	21,349	0	7,506	795,107
Mississippi													
Softwood	3,031,288	557,500	411,593	70,360	3,254,800	178,862	409,665	29,729	24,142	1,752	0	1,595	839,798
Hardwood	437,648	76,997	36,107	5,862	1,691,700	139,218	108,717	8,140	113,853	8,539	0	0	238,756
Total	3,468,936	634,497	447,700	76,222	4,946,500	318,079	518,382	37,869	137,995	10,290	0	1,595	1,078,554
Oklahoma													
Softwood	353,703	63,660	59,839	10,410	231,800	29,472	0	0	2,244	163	0	2,215	105,919
Hardwood	42,717	7,085	0	0	209,900	24,866	0	0	122,079	9,355	0	0	41,306
Total	396,421	70,744	59,839	10,410	441,700	54,338	0	0	124,322	9,518	0	2,215	147,225

Table 19—Volume of roundwood products by region, state, species group, and type of product, United States, 2005 *(continued)*

Region, state, and species group	Roundwood products												
	Saw logs		Veneer logs		Pulpwood		Composite products		Fuelwood		Posts, poles, pilings	Other products	All products
	MBF[a]	MCF[b]	MBF	MCF	Cords	MCF	Cords	MCF	Cords	MCF	MCF	MCF	MCF
Tennessee													
Softwood	116,141	20,846	1,646	286	551,600	48,965	0	0	39,105	2,837	0	13,019	85,954
Hardwood	816,083	152,369	9,471	1,497	1,060,300	88,152	0	0	323,365	24,781	0	447	267,246
Total	932,224	173,215	11,116	1,784	1,611,900	137,117	0	0	362,470	27,618	0	13,466	353,200
Texas													
Softwood	1,362,415	220,884	1,074,727	174,227	1,501,800	172,262	0	0	7,843	569	0	1,321	569,264
Hardwood	306,767	51,394	123	20	1,115,800	91,245	0	0	74,792	5,710	0	0	148,369
Total	1,669,182	272,278	1,074,850	174,247	2,617,600	263,507	0	0	82,635	6,279	0	1,321	717,632
All South Central states													
Softwood	9,861,414	1,777,280	3,307,463	558,413	16,025,665	1,143,242	1,189,843	85,762	520,452	37,671	0	74,658	3,677,026
Hardwood	3,802,477	652,355	252,306	40,770	9,579,863	754,329	290,099	21,735	1,412,485	106,897	0	13,189	1,589,275
Total	13,663,891	2,429,634	3,559,769	599,183	25,605,528	1,897,571	1,479,942	107,498	1,932,937	144,567	0	87,847	5,266,300
Rocky Mountain North													
Idaho													
Softwood	1,020,850	244,691	157,161	12,404	99,287	7,943	0	0	119,595	7,882	0	16,503	289,423
Hardwood	640	100	0	0	0	0	0	0	36,394	2,911	0	0	3,011
Total	1,021,490	244,791	157,161	12,404	99,287	7,943	0	0	155,988	10,793	0	16,503	292,434
Montana													
Softwood	0	148,899	113,828	22,585	31,403	2,512	0	0	289,927	6,333	0	6,139	186,468
Hardwood	0	1	0	0	0	0	0	0	24,527	1,962	0	0	1,963
Total	0	148,900	113,828	22,585	31,403	2,512	0	0	314,454	8,295	0	6,139	188,431
All Rocky Mountains North States													
Softwood	1,554,717	393,590	270,989	34,989	130,690	10,455	0	0	409,522	14,215	0	22,642	475,891
Hardwood	647	101	0	0	0	0	0	0	60,920	4,874	0	0	4,975
Total	1,555,364	393,691	270,989	34,989	130,690	10,455	0	0	470,442	19,089	0	22,642	480,866
Rocky Mountain South													
Arizona													
Softwood	66,489	11,852	0	0	7,569	606	0	0	213,881	26,562	0	251	39,271
Hardwood	0	0	0	0	0	0	0	0	56,285	4,503	0	0	4,503
Total	66,489	11,852	0	0	7,569	606	0	0	270,166	31,065	0	251	43,773
Colorado													
Softwood	66,255	12,620	0	0	0	0	0	0	407,829	19,980	0	1,866	34,466
Hardwood	6,990	1,203	0	0	0	0	0	0	100,335	8,027	0	1,508	10,738
Total	73,245	13,823	0	0	0	0	0	0	508,164	28,007	0	3,374	45,204
Nevada													
Softwood	4,710	902	0	0	0	0	0	0	38,327	9,483	0	2	10,387
Hardwood	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4,710	902	0	0	0	0	0	0	38,327	9,483	0	2	10,387

New Mexico													
Softwood	70,692	12,063	0	0	8,276	651	0	0	144,220	8,238	0	1,419	22,371
Hardwood	0	0	0	0	0	0	0	0	2,771	2,771	0	416	3,187
Total	70,692	12,063	0	0	8,276	651	0	0	146,991	11,009	0	1,835	25,557
Utah													
Softwood	21,193	3,910	0	0	0	0	0	0	56,605	7,954	0	2,018	13,882
Hardwood	247	41	0	0	0	0	0	0	12,025	962	0	109	1,112
Total	21,440	3,951	0	0	0	0	0	0	68,630	8,916	0	2,126	14,993
Wyoming													
Softwood	60,411	0	0	0	0	0	0	0	103,672	3,022	0	1,805	4,827
Hardwood	0	0	0	0	0	0	0	0	34,279	2,486	0	0	2,486
Total	60,411	0	0	0	0	0	0	0	137,951	5,508	0	1,805	7,312
All Rocky Mountain South States													
Softwood	289,750	41,347	0	0	15,846	1,256	0	0	964,533	75,239	0	7,360	125,203
Hardwood	7,237	1,244	0	0	0	0	0	0	205,695	18,748	0	2,033	22,025
Total	296,987	42,591	0	0	15,846	1,256	0	0	1,170,228	93,987	0	9,393	147,227
Pacific Southwest													
California													
Softwood	1,713,354	328,229	141,685	27,143	0	0	0	3,941	1,425,011	198,210	0	608	558,131
Hardwood	0	0	714	127	0	0	0	0	724,828	60,400	0	0	60,526
Total	1,713,354	328,229	142,399	27,270	0	0	0	3,941	2,149,839	258,610	0	608	618,657
Pacific Northwest													
Oregon													
Softwood	3,234,974	772,070	943,538	220,453	37,790	3,048	17,895	1,443	467,236	61,834	0	17,782	1,076,630
Hardwood	22,830	4,951	58,004	11,109	23,706	1,912	0	0	299,277	24,939	0	0	42,910
Total	3,257,804	777,021	1,001,542	231,562	61,496	4,959	17,895	1,443	766,512	86,773	0	17,782	1,119,540
Washington													
Softwood	3,584,521	855,494	220,200	51,449	163,693	15,551	0	0	534,415	67,839	0	3,914	994,246
Hardwood	244,516	45,062	13,033	2,442	0	0	0	0	399,962	33,329	0	0	80,832
Total	3,829,037	900,556	233,233	53,891	163,693	15,551	0	0	934,377	101,168	0	3,914	1,075,079

Table 19—Volume of roundwood products by region, state, species group, and type of product, United States, 2005 *(continued)*

Region, state, and species group	Roundwood products												
	Saw logs		Veneer logs		Pulpwood		Composite products		Fuelwood		Posts, poles, pilings	Other products	All products
	MBF[a]	MCF[b]	MBF	MCF	Cords	MCF	Cords	MCF	Cords	MCF	MCF	MCF	MCF
All Pacific Northwest States													
Softwood	6,819,495	1,627,564	1,163,738	271,902	201,483	18,598	17,895	1,443	1,001,650	129,673	0	21,696	2,070,876
Hardwood	267,346	50,013	71,037	13,551	23,706	1,912	0	0	699,239	58,267	0	0	123,743
Total	7,086,841	1,677,576	1,234,775	285,453	225,189	20,510	17,895	1,443	1,700,889	187,940	0	21,696	2,194,619
All Regions													
All States													
Softwood	30,261,466	5,933,336	5,880,579	1,060,967	35,022,881	2,578,088	3,717,743	273,570	5,361,087	528,561	0	210,651	10,585,172
Hardwood	11,712,919	1,940,878	1,007,516	177,036	26,343,073	1,909,368	3,720,520	291,234	14,703,355	1,647,795	0	51,323	6,017,636
Total	41,974,385	7,874,214	6,888,096	1,238,004	61,365,954	4,487,457	7,438,263	564,804	20,064,442	2,176,356	0	261,974	16,602,808

SOURCE: Harvest estimation system (HES).
[a] MBF is thousand board feet.
[b] MCF is thousand cubic feet.

Table 20a— Roundwood products in Northeast Region, United States, 1996

State and species group	Volume ($\times 10^6$ ft^3)			
	Sawlogs	Pulpwood	Miscellaneous	Fuelwood
Connecticut	—	—	—	—
Softwood	3,302	252	39	51
Hardwood	6,996	1	—	16,770
Total	10,298	253	39	16,821

Table 20b—Roundwood products in Northeast Region, United States, 2005

State and species group	Volume ($\times 10^6$ ft^3)			
	Sawlogs	Pulpwood	Miscellaneous	Fuelwood
Connecticut	—	—	—	—
Softwood	4,343	157	35	48
Hardwood	7,180	1	—	21,963
Total	11,523	158	35	22,011

Source: Johnson 2001.

Table 21a—Northeast Regional Summary of roundwood products in United States, 1996

	Volume ($\times 10^6$ ft^3)					
Species group	Sawlogs	Veneer logs	Pulpwood	Composites	Miscellaneous	Fuelwood
Softwood	259,284	2,571	214,365	179	15,086	32,529
Hardwood	454,809	37,243	309,519	1,940	17,589	667,285
Total	714,093	39,814	523,884	2,119	32,675	699,814

Source: Johnson 2001.

Table 21b—Northeast Regional Summary of roundwood products in United States, 2005

	Volume ($\times 10^6$ ft^3)					
Species group	Sawlogs	Veneer logs	Pulpwood	Composites	Miscellaneous	Fuelwood
Softwood	341,043	2,374	133,886	266	13,444	30,614
Hardwood	466,767	46,770	249,280	2,757	16,255	873,917
Total	807,810	49,143	383,166	3,023	29,698	904,531

Table 22—Volume of roundwood products and species group, United States, 1996 and 2005

Product and species group	Volume ($\times 10^6$ ft^3)			Change (%)
	1996[a]	2005[b]	Change	
Saw logs				
Softwood	5,217,784	5,933,336	715,552	13.7
Hardwood	1,959,956	1,940,878	– 19,078	– 1.0
Total	7,177,740	7,874,214	696,474	9.7
Veneer logs				
Softwood	1,046,687	1,060,967	14,280	1.4
Hardwood	171,413	177,036	5,623	3.3
Total	1,218,100	1,238,004	19,903	1.6
Pulpwood				
Softwood	2,823,915	2,578,088	– 245,826	– 8.7
Hardwood	2,242,491	1,909,368	– 333,123	– 14.9
Total	5,066,405	4,487,457	– 578,949	– 11.4
Other industrial				
Softwood	328,402	484,221	155,819	47.4
Hardwood	292,562	342,557	49,995	17.1
Total	620,964	826,778	205,814	33.1
All industrial				
Softwood	9,416,787	10,056,612	639,825	6.8
Hardwood	4,666,423	4,369,841	– 296,582	– 6.4
Total	14,083,210	14,426,452	343,243	2.4
Fuelwood				
Softwood	487,131	528,561	41,429	8.5
Hardwood	2,015,947	1,647,795	– 368,152	– 18.3
Total	2,503,078	2,176,356	– 326,723	– 13.1
All products				
Softwood	9,903,918	10,585,172	681,254	6.9
Hardwood	6,682,370	6,017,636	– 664,734	– 9.9
Total	16,586,288	16,602,808	16,520	0.1

[a] Johnson 2001.
[b] Howard 2007.

Table 23—Volume of roundwood products and species group, United States, projections for 2006 through 2010

Product and species group	Volume ($\times 10^6$ ft^3)				
	2006	2007[a]	2008	2009	2010
Saw logs					
Softwood	5,979,199	6,073,288	6,232,013	6,398,191	6,481,931
Hardwood	1,940,878	1,968,787	1,986,419	2,009,198	2,024,988
Total	7,920,077	8,042,075	8,218,432	8,407,389	8,506,920
Veneer logs					
Softwood	1,060,967	1,044,737	1,028,435	1,011,727	991,601
Hardwood	177,036	177,301	177,566	178,725	179,693
Total	1,238,004	1,222,038	1,206,001	1,190,453	1,171,294
Pulpwood					
Softwood	2,547,045	2,561,483	2,575,823	2,594,021	2,604,298
Hardwood	2,033,757	2,068,953	2,106,510	2,139,114	2,161,042
Total	4,580,802	4,630,436	4,682,333	4,733,135	4,765,340
Other industrial					
Softwood	484,221	530,939	576,608	628,855	676,482
Hardwood	342,557	377,932	408,177	439,682	469,441
Total	826,778	908,871	984,785	1,068,537	1,145,923
All industrial					
Softwood	10,071,431	10,210,447	10,412,878	10,632,794	10,754,312
Hardwood	4,494,229	4,592,973	4,678,672	4,766,719	4,835,164
Total	14,565,661	14,803,419	15,091,550	15,399,513	15,589,477
Fuelwood					
Softwood	528,334	524,281	517,763	511,561	505,504
Hardwood	1,647,852	1,611,659	1,567,816	1,524,835	1,478,171
Total	2,176,185	2,135,939	2,085,579	2,036,396	1,983,675
All products					
Softwood	10,599,765	10,734,727	10,930,642	11,144,355	11,259,816
Hardwood	6,142,081	6,204,632	6,246,488	6,291,554	6,313,335
Total	16,741,846	16,939,359	17,177,129	17,435,909	17,573,151

Howard 2007.

Table 24—Difference between North Central Region actual timber product output (TPO) and harvest estimation system TPO, Wisconsin 1997–2005

	Difference (%)					
	Sawlogs		Veneer logs		Pulpwood	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
1999	0.2	– 0.1	1.0	– 0.4	0.2	0.3
2003	– 0.2	0.0	1.0	– 1.3	– 0.1	0.3

Table 25—Difference between Southeast Region actual timber product output (TPO) and harvest estimation system TPO, Georgia 1997–2005

	Difference (%)					
	Sawlogs		Veneer Logs		Pulpwood	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
1995	5.3	1.0	– 7.4	– 3.1	– 8.0	– 11.3
1997	—	—	6.0	—	– 1.9	– 8.2
1999	—	—	6.6	—	7.2	– 11.3
2005	– 5.6	–3.3	– 3.3	– 3.3	3.0	9.4

Table 26—Difference between South Central Region actual timber product output (TPO) and harvest estimation system TPO, Alabama 1997–2005

	Difference (%)					
	Sawlogs		Veneer logs		Pulpwood	
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
1995	2.2	– 1.2	1.5	—	– 9.5	3.2
1997	– 1.0	– 9.7	– 1.9	—	8.2	—
1999	0.1	– 0.9	8.8	—	– 1.7	– 12.3
2005	– 0.3	– 4.3	– 3.8	– 6.0	2.3	2.3