



The Contribution of Working Forests to the Economy of the State of Washington, by County



Forest2Market®



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Prepared for:

Washington Forest Protection Association
Cindy Mitchell
Sr. Director of Public Affairs
724 Columbia St NW, Suite 250
Olympia, WA 98501

Provided by:

Forest2Market, Inc.
15720 John J Delany Drive, Suite 550
Charlotte, NC 28277

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Our commitment to deliver the most accurate, credible and quantitative market insight to our customers has never wavered. Our customers make better-informed decisions and thrive because they have credible and consistent measures of their performance compared to the broader market.

Overview

In Washington State, there are 23 million acres of forest; 47 percent of these acres are working forests, approximately 10 million acres. According to the Washington Forest Protection Association (WFPA), 71 percent of the timber harvested in the state in 2012 came from privately owned forests, 18 percent from harvests on state and county lands, 8 percent from tribal lands and the remaining 3 percent from federal lands.

The WFPA engaged Forest2Market to quantify the economic benefits that redound to the state from these working forests. When timber is harvested, it becomes an economic engine that drives activity—employment, wages and revenue for both state and local governments.

Data Sources

Forest2Market pulled the necessary raw data from both state and federal sources. These were:

1. 2011 Public and Private Harvest Statistics, Washington State Department of Revenue
2. 2011 County Business Patterns Data by county and NAICS code, U.S. Census Bureau (CBP)
3. 2011 State Quarterly Census of Employment and Wages by state and NAICS code and by county and NAICS code (for 3-digit NAICS industries), Washington State Employment Security Department (QCEW)
4. Total U.S. Exports (Origin of Movement) via Washington and Top 25 6-digit HS Commodities Based on 2012 Dollar Value, U.S. Census Bureau
5. Pacific Maritime Association 2011 Annual Report, Pacific Maritime Association
6. Conway, Richard. 1994. The Forest Products Economic Impact Study Current Conditions and Issues. Prepared for WFPA, WADNR, WADTED by Dick Conway and Associates, Seattle, Washington
7. 2011 Gross Business Income, Washington State Department of Revenue
8. 2010 Valuation of Privately-Owned Designated Forestland, Washington State Department of Revenue
9. Comparison of Average Levy Rates by Year Due, Washington State Department of Revenue

These sources are referred to by number in the methodology section.

Methodology

Step One:

Forest2Market reviewed the publicly available data on both the state and federal level to understand the most recent year that complete data sets had been released. Calendar year 2011 was chosen as the study year for the update.

Step Two:

Forest2Market included all 39 counties in the state of Washington in the study.

Step Three:

Forest2Market and the WFPA determined the *North American Industry Classification System (NAICS) codes* that were used to quantify the economic contribution of working forests. NAICS codes are the standard used by Federal agencies to classify business establishments for the purpose of collecting, analyzing and publishing statistical data related to the US business economy. Data for the following NAICS codes were aggregated:

113	Forestry and logging
1153	Support activities for forestry
321	Wood products manufacturing
322	Paper products manufacturing
33711	Wood kitchen cabinet and countertop manufacturing
337122	Non-upholstered wood household furniture manufacturing
337129	Wood television, radio, and sewing machine cabinet manufacturing
337211	Wood office furniture manufacturing
337212	Custom architectural woodwork and millwork manufacturing
42331	Lumber, plywood, millwork, and wood panel merchant wholesalers
4241	Paper merchant wholesalers
483111	Deep sea freight transportation related to forestry
4883	Support activities for all water transportation related to forestry

In the previous study, the paper wholesalers NAICS code was a narrower code (i.e., 424110). It was expanded this year to the broader 4241.

Step Four: Data Collection

Employment and wage data are either actual or estimated totals sourced from the CBP (Source 2) or the QCEW (Source 3).

While we included NAICS code 337129 (Wood television, radio, and sewing machine cabinet manufacturing) in the analysis this year, no employment or wage data were available from either the CBP or the QCEW; we were, however, able to include revenues from this industry segment into the total revenue data.

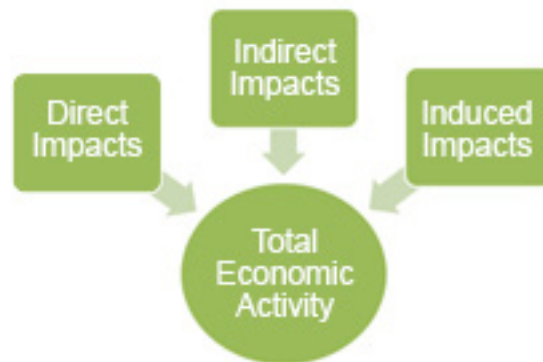
In order to estimate the percent of port activity related to forestry, Forest2Market used two methods. First, counties where 483111 or 4883 industry activity is reported were estimated using U.S. export data for the state of Washington as reported by the Census Bureau (Source 4). County maritime connections were then verified independently, and any counties that lacked a maritime connection were excluded.

Because Forest2Market and WFPA believed this method underestimated the forestry-related port activity in Washington, the number of forestry-related jobs in the six counties containing Washington's ports were estimated using 2011 data about log and lumber export volumes (mbf) from the Pacific Maritime Association (Source 5) and an estimate of the number of jobs per mbf from the Conway report (Source 6). The number of jobs found through this process were then multiplied by the NAICS industry average annual wage per employee from either the CBP or the QCEW.

Step Five:

One form of economic activity leads to others. When a person is paid a salary, for instance, he or she spends that salary on a variety of goods and services. That expenditure then supports other jobs. As a result, total economic activity that results from an event (such as a factory opening or closure, or an increase or decrease in activity spurred by government incentives or regulations) includes more than just direct impacts. The following graphic illustrates the three types of impacts that comprise total economic contribution.

Direct impacts include wages and spending on goods and services by all entities operating in a single NAICS



code. A sawmill, for instance, pays wages to its employees, buys timber from local landowners and pays various types of taxes to state and local governments.

Indirect impacts are the production, employment and income changes occurring in other businesses in the community that supply inputs to the industry under consideration. For instance, if the manufacturing facility sourced \$75,000 worth of timber from a local landowner and \$5,000 in office supplies from a local retailer; these expenditures produce additional spending in the community as landowners replant trees and the office supply store stocks the office supplies being used.

Induced impacts are the effects of spending by the households in the local economy as the result of direct and indirect effects. The induced effects arise when employees who are working for the manufacturing plant spend their incomes in the community. This in turn sets off a new round of spending, as the employees in the movie theaters, restaurants and grocery stores go out and spend their own wages.

The sum of the direct, indirect and induced activity associated is the *total economic activity* associated with any individual NAICS code.

In order to calculate total economic activity, a multiplier is applied to the direct impact figures. Forest2Market used RIMS I and RIMS II multipliers from the Bureau of Economic Analysis to determine total economic contribution for employment and wages.

In addition, because forestry-related industries that rely on working forests are interrelated, often providing inputs to each other, Forest2Market used the Washington input/output table (2007 Washington Input-Output Table created by William B. Beyers and Dr. Ta-Win Lin) to estimate overcount and ensure that direct jobs in one industry were not counted as indirect jobs in another. Total jobs and wages in this report exclude overcount.

Results

By State

The following table shows the statewide results of this study. In total, forestry-related industries in Washington employed 39,732 people in 2011; compensation for these jobs totaled nearly \$2 billion.

Washington State - 2011	
Economic Impact of Forestry-Related Activities	
Stumpage Sales	\$820,743,215
Direct Jobs	39,732
Total Direct, Indirect and Induced Jobs	107,455
Direct Wages	\$1,939,819,801
Total Direct, Indirect and Induced Wages	\$4,455,996,258
Total Revenue	\$21,795,712,628
Total Taxes	\$175,264,618

When the total effect of harvest activities are accounted for—total economic activity as defined in the Methodology section—forestry-related industries account for 107,455 jobs paying nearly \$4.5 billion in wages.

Annual sales in forestry-related industries total nearly \$22 billion in 2011. Taxes paid by entities and individuals in these supply chains totaled more than \$175 million.

Employment and Wages by County

This table shows a breakout of stumpage sales, employment and wages by county.

County	Stumpage Sales	Total Jobs (Direct, Indirect and Induced)		Total Wages (Direct, Indirect and Induced)	
		Direct Jobs		Direct Wages	
ADAMS	\$0	0	0	\$0	\$0
ASOTIN	\$38,204	89	132	\$3,934,017	\$6,010,433
BENTON	\$0	130	224	\$4,249,095	\$6,535,569
CHELAN	\$747,269	481	696	\$18,389,511	\$24,494,586
CLALLAM	\$46,573,718	1,166	3,320	\$51,987,131	\$129,926,705
CLARK	\$18,508,630	2,258	6,960	\$129,773,287	\$313,532,972
COLUMBIA	\$978,741	10	19	\$363,519	\$662,606
COWLITZ	\$73,098,935	4,616	17,025	\$297,350,210	\$795,212,527
DOUGLAS	\$0	41	54	\$1,224,612	\$1,630,519
FERRY	\$3,061,046	72	189	\$2,957,193	\$7,092,079
FRANKLIN	\$0	105	185	\$3,302,199	\$5,151,105
GARFIELD	\$1,243,297	10	14	\$337,885	\$510,376
GRANT	\$0	430	654	\$17,984,598	\$23,160,983
GRAYS HARBOR	\$97,645,504	2,192	6,087	\$109,806,493	\$275,444,811
ISLAND	\$786,974	164	388	\$5,293,250	\$10,430,670
JEFFERSON	\$32,931,733	401	1,182	\$7,597,265	\$16,431,632
KING	\$34,483,908	6,061	15,607	\$348,912,774	\$725,733,475
KITSAP	\$6,597,029	221	520	\$11,928,983	\$24,959,718
KITTITAS	\$1,471,039	130	332	\$4,163,140	\$9,159,950
KLICKITAT	\$26,501,365	461	1,344	\$13,519,854	\$36,886,104
LEWIS	\$125,901,777	2,379	6,241	\$108,144,118	\$274,641,785
LINCOLN	\$19,904	10	27	\$363,519	\$873,098
MASON	\$35,146,365	996	2,714	\$45,881,225	\$116,094,964
OKANOGAN	\$3,177,309	154	265	\$4,617,128	\$7,410,231
PACIFIC	\$63,823,260	366	938	\$16,049,354	\$39,849,416
PEND OREILLE	\$7,801,240	290	741	\$9,788,860	\$20,987,057
PIERCE	\$41,437,960	4,290	11,758	\$211,297,010	\$483,022,606
SAN JUAN	\$60,032	18	48	\$534,717	\$1,322,426
SKAGIT	\$37,247,962	688	1,851	\$27,726,698	\$70,833,371
SKAMANIA	\$18,856,083	247	674	\$9,509,124	\$24,505,653
SNOHOMISH	\$44,023,591	3,149	8,368	\$131,399,634	\$302,556,975
SPOKANE	\$1,766,981	1,824	3,964	\$76,797,210	\$139,399,436
STEVENS	\$17,114,852	730	1,898	\$33,413,858	\$79,989,903
THURSTON	\$32,803,654	1,284	3,538	\$63,825,220	\$147,934,488
WAHAKIUM	\$19,937,833	112	322	\$4,797,540	\$13,638,326
WALLA WALLA	\$290,472	810	1,750	\$34,266,449	\$58,125,697
WHATCOM	\$23,642,435	1,594	4,282	\$61,122,300	\$152,478,858
WHITMAN	\$1,018	0	0	\$0	\$0
YAKIMA	\$3,023,094	1,754	3,144	\$67,210,817	\$109,365,150
Totals	\$820,743,215	39,732	107,455	\$1,939,819,801	\$4,455,996,258

Revenue by County

Annual revenue is the Gross Business Income for each NAICS code as reported by the Washington Department of Revenue. This table breaks out estimated revenue generated by forestry-related activities in 2011 by county. These numbers are estimates based on the percentage of total wages each county represents.

Annual Revenue by County	
County	Annual Revenues
ADAMS	\$0
ASOTIN	\$44,202,408
BENTON	\$47,742,608
CHELAN	\$206,623,576
CLALLAM	\$584,124,648
CLARK	\$1,458,125,788
COLUMBIA	\$4,084,486
COWLITZ	\$3,341,011,228
DOUGLAS	\$13,759,674
FERRY	\$33,226,861
FRANKLIN	\$37,103,331
GARFIELD	\$3,796,460
GRANT	\$202,073,989
GRAYS HARBOR	\$1,233,779,945
ISLAND	\$59,474,676
JEFFERSON	\$85,362,472
KING	\$3,920,365,463
KITSAP	\$134,033,423
KITTITAS	\$46,776,823
KLICKITAT	\$151,908,366
LEWIS	\$1,215,101,592
LINCOLN	\$4,084,486
MASON	\$515,519,021
OKANOGAN	\$51,877,809
PACIFIC	\$180,329,695
PEND OREILLE	\$109,987,114
PIERCE	\$2,374,122,026
SAN JUAN	\$6,008,049
SKAGIT	\$311,535,716
SKAMANIA	\$106,844,011
SNOHOMISH	\$1,476,399,330
SPOKANE	\$862,889,390
STEVENS	\$375,436,343
THURSTON	\$717,136,792
WAHAKIUM	\$53,904,911
WALLA WALLA	\$385,016,006
WHATCOM	\$686,766,928
WHITMAN	\$0
YAKIMA	\$755,177,185
	\$21,795,712,628

Taxes by County

This table breaks out, by county, the actual stumpage sales, stumpage taxes also known as forest harvest excise taxes (paid in lieu of property taxes) and property taxes paid by forest landowners as the result of forestry-related activities in 2011.

County	Stumpage Sales	Stumpage Taxes	Property Taxes	Total Actual Taxes
ADAMS	\$0	\$0	\$0	\$0
ASOTIN	\$38,204	\$1,910	\$7,124	\$9,034
BENTON	\$0	\$0	\$0	\$0
CHELAN	\$747,269	\$37,363	\$18,254	\$55,617
CLALLAM	\$46,573,718	\$2,328,685	\$307,825	\$2,636,510
CLARK	\$18,508,630	\$925,430	\$140,606	\$1,066,036
COLUMBIA	\$978,741	\$48,937	\$11,100	\$60,037
COWLITZ	\$73,098,935	\$3,654,946	\$746,907	\$4,401,853
DOUGLAS	\$0	\$0	\$252	\$252
FERRY	\$3,061,046	\$153,052	\$27,464	\$180,516
FRANKLIN	\$0	\$0	\$0	\$0
GARFIELD	\$1,243,297	\$62,165	\$558	\$62,722
GRANT	\$0	\$0	\$0	\$0
GRAYS HARBOR	\$97,645,504	\$4,882,274	\$1,125,157	\$6,007,432
ISLAND	\$786,974	\$39,348	\$7,150	\$46,498
JEFFERSON	\$32,931,733	\$1,646,586	\$160,012	\$1,806,599
KING	\$34,483,908	\$1,724,195	\$444,368	\$2,168,563
KITSAP	\$6,597,029	\$329,851	\$59,776	\$389,628
KITTITAS	\$1,471,039	\$73,552	\$41,070	\$114,621
Klickitat	\$26,501,365	\$1,325,068	\$137,959	\$1,463,027
LEWIS	\$125,901,777	\$6,295,087	\$926,358	\$7,221,445
LINCOLN	\$19,904	\$995	\$0	\$995
MASON	\$35,146,365	\$1,757,318	\$317,138	\$2,074,456
OKANOGAN	\$3,177,309	\$158,865	\$15,144	\$174,009
PACIFIC	\$63,823,260	\$3,191,163	\$672,618	\$3,863,780
PEND OREILLE	\$7,801,240	\$390,062	\$82,095	\$472,156
PIERCE	\$41,437,960	\$2,071,897	\$601,303	\$2,673,201
SAN JUAN	\$60,032	\$3,002	\$6,643	\$9,644
SKAGIT	\$37,247,962	\$1,862,398	\$263,130	\$2,125,528
SKAMANIA	\$18,856,083	\$942,804	\$97,230	\$1,040,034
SNOHOMISH	\$44,023,591	\$2,201,179	\$160,528	\$2,361,706
SPOKANE	\$1,766,981	\$88,349	\$64,687	\$153,036
STEVENS	\$17,114,852	\$855,742	\$189,422	\$1,045,164
THURSTON	\$32,803,654	\$1,640,182	\$193,012	\$1,833,194
WAHIAKUM	\$19,937,833	\$996,891	\$124,925	\$1,121,817
WALLA WALLA	\$290,472	\$14,524	\$3,436	\$17,959
WHATCOM	\$23,642,435	\$1,182,121	\$128,837	\$1,310,958
WHITMAN	\$1,018	\$51	\$0	\$51
YAKIMA	\$3,023,094	\$151,155	\$20,517	\$171,671
	\$820,743,215	\$41,037,146	\$7,102,605	\$48,139,751

This table breaks out, by county, the other taxes paid to state and county governments as the result of forestry-related activities in 2011. These numbers are estimates based on the percentage of total wages each county represents.

County	B&O Taxes	Retail Sales Taxes	PUT	Other Fees/ Assessments*	Fire Protection	Total Est. Taxes
ADAMS	\$0	\$0	\$0	\$0	\$0	\$0
ASOTIN	\$119,662	\$114,460	\$3,290	\$1,485	\$18,916	\$257,813
BENTON	\$129,246	\$123,628	\$3,554	\$1,604	\$20,431	\$278,462
CHELAN	\$559,359	\$535,043	\$15,380	\$6,940	\$88,422	\$1,205,145
CLALLAM	\$1,581,309	\$1,512,567	\$43,479	\$19,619	\$249,970	\$3,406,944
CLARK	\$3,947,354	\$3,775,757	\$108,536	\$48,974	\$623,990	\$8,504,611
COLUMBIA	\$11,057	\$10,577	\$304	\$137	\$1,748	\$23,823
COWLITZ	\$9,044,594	\$8,651,411	\$248,688	\$112,214	\$1,429,751	\$19,486,658
DOUGLAS	\$37,249	\$35,630	\$1,024	\$462	\$5,888	\$80,254
FERRY	\$89,950	\$86,040	\$2,473	\$1,116	\$14,219	\$193,798
FRANKLIN	\$100,444	\$96,078	\$2,762	\$1,246	\$15,878	\$216,408
GARFIELD	\$10,278	\$9,831	\$283	\$128	\$1,625	\$22,143
GRANT	\$547,043	\$523,262	\$15,041	\$6,787	\$86,475	\$1,178,609
GRAYS HARBOR	\$3,340,018	\$3,194,822	\$91,836	\$41,439	\$527,983	\$7,196,099
ISLAND	\$161,006	\$154,007	\$4,427	\$1,998	\$25,452	\$346,890
JEFFERSON	\$231,088	\$221,043	\$6,354	\$2,867	\$36,530	\$497,882
KING	\$10,612,988	\$10,151,625	\$291,812	\$131,673	\$1,677,680	\$22,865,779
KITSAP	\$362,848	\$347,074	\$9,977	\$4,502	\$57,358	\$781,758
KITTITAS	\$126,632	\$121,127	\$3,482	\$1,571	\$20,018	\$272,829
Klickitat	\$411,238	\$393,360	\$11,307	\$5,102	\$65,008	\$886,015
LEWIS	\$3,289,453	\$3,146,455	\$90,446	\$40,812	\$519,990	\$7,087,157
LINCOLN	\$11,057	\$10,577	\$304	\$137	\$1,748	\$23,823
MASON	\$1,395,584	\$1,334,915	\$38,373	\$17,315	\$220,611	\$3,006,797
OKANOGAN	\$140,441	\$134,335	\$3,862	\$1,742	\$22,201	\$302,581
PACIFIC	\$488,178	\$466,956	\$13,423	\$6,057	\$77,170	\$1,051,784
PEND OREILLE	\$297,751	\$284,807	\$8,187	\$3,694	\$47,068	\$641,507
PIERCE	\$6,427,087	\$6,147,691	\$176,718	\$79,739	\$1,015,981	\$13,847,216
SAN JUAN	\$16,265	\$15,558	\$447	\$202	\$2,571	\$35,042
SKAGIT	\$843,372	\$806,709	\$23,189	\$10,464	\$133,318	\$1,817,052
SKAMANIA	\$289,242	\$276,668	\$7,953	\$3,589	\$45,723	\$623,174
SNOHOMISH	\$3,996,824	\$3,823,075	\$109,896	\$49,588	\$631,810	\$8,611,192
SPOKANE	\$2,335,965	\$2,234,417	\$64,229	\$28,982	\$369,265	\$5,032,857
STEVENS	\$1,016,360	\$972,177	\$27,946	\$12,610	\$160,664	\$2,189,756
THURSTON	\$1,941,392	\$1,856,996	\$53,380	\$24,086	\$306,891	\$4,182,746
WAHIAKUM	\$145,928	\$139,585	\$4,012	\$1,811	\$23,068	\$314,404
WALLA WALLA	\$1,042,293	\$996,983	\$28,659	\$12,932	\$164,764	\$2,245,630
WHATCOM	\$1,859,176	\$1,778,355	\$51,120	\$23,066	\$293,895	\$4,005,611
WHITMAN	\$0	\$0	\$0	\$0	\$0	\$0
YAKIMA	\$2,044,372	\$1,955,500	\$56,212	\$25,364	\$323,170	\$4,404,619
	\$59,004,103	\$56,439,100	\$1,622,364	\$732,051	\$9,327,250	\$127,124,867

*Forest Practices Application Fee, Silviculture Burning Permits and O/tax (litter, motor veh., haz subst, etc.)

The total of both actual and estimated taxes paid by industry participants totaled \$175,264,618 in 2011.

County	Total Actual Taxes	Total Est. Taxes	Total Actual & Est. Taxes
ADAMS	\$0	\$0	\$0
ASOTIN	\$9,034	\$257,813	\$266,848
BENTON	\$0	\$278,462	\$278,462
CHELAN	\$55,617	\$1,205,145	\$1,260,762
CLALLAM	\$2,636,510	\$3,406,944	\$6,043,454
CLARK	\$1,066,036	\$8,504,611	\$9,570,647
COLUMBIA	\$60,037	\$23,823	\$83,860
COWLITZ	\$4,401,853	\$19,486,658	\$23,888,511
DOUGLAS	\$252	\$80,254	\$80,506
FERRY	\$180,516	\$193,798	\$374,314
FRANKLIN	\$0	\$216,408	\$216,408
GARFIELD	\$62,722	\$22,143	\$84,866
GRANT	\$0	\$1,178,609	\$1,178,609
GRAYS HARBOR	\$6,007,432	\$7,196,099	\$13,203,531
ISLAND	\$46,498	\$346,890	\$393,388
JEFFERSON	\$1,806,599	\$497,882	\$2,304,481
KING	\$2,168,563	\$22,865,779	\$25,034,342
KITSAP	\$389,628	\$781,758	\$1,171,386
KITTITAS	\$114,621	\$272,829	\$387,450
KLICKITAT	\$1,463,027	\$886,015	\$2,349,042
LEWIS	\$7,221,445	\$7,087,157	\$14,308,601
LINCOLN	\$995	\$23,823	\$24,818
MASON	\$2,074,456	\$3,006,797	\$5,081,253
OKANOGAN	\$174,009	\$302,581	\$476,590
PACIFIC	\$3,863,780	\$1,051,784	\$4,915,564
PEND OREILLE	\$472,156	\$641,507	\$1,113,663
PIERCE	\$2,673,201	\$13,847,216	\$16,520,417
SAN JUAN	\$9,644	\$35,042	\$44,687
SKAGIT	\$2,125,528	\$1,817,052	\$3,942,580
SKAMANIA	\$1,040,034	\$623,174	\$1,663,209
SNOHOMISH	\$2,361,706	\$8,611,192	\$10,972,899
SPOKANE	\$153,036	\$5,032,857	\$5,185,892
STEVENS	\$1,045,164	\$2,189,756	\$3,234,920
THURSTON	\$1,833,194	\$4,182,746	\$6,015,939
WAHKIAKUM	\$1,121,817	\$314,404	\$1,436,220
WALLA WALLA	\$17,959	\$2,245,630	\$2,263,589
WHATCOM	\$1,310,958	\$4,005,611	\$5,316,570
WHITMAN	\$51	\$0	\$51
YAKIMA	\$171,671	\$4,404,619	\$4,576,290
	\$48,139,751	\$127,124,867	\$175,264,618



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Sr. Director of Public Affairs
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15720 John J Delany Drive, Suite 550
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