



THE WOOD & FIBER SUPPLY CHAIN EXPERTS

The Contribution of Working Forests to the Economy of the State of Washington, by County, 2013



Forest2Market®

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Prepared for:



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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.

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Overview

In Washington State, there are 23 million acres of forest, of which nearly 11 million acres (or 47%) are working forests. According to the Washington Forest Protection Association (WFPA), the vast majority of timber harvested in Washington (70%) in 2014 originated from privately-owned timberlands. By contrast, 19 percent was harvested from state and county lands, 8 percent from tribal lands and the remaining 3 percent from federal lands.

When timber is harvested, it becomes an economic engine that drives activity, including employment, wages and revenue for both state and local governments. The WFPA engaged Forest2Market to quantify the economic impacts of these working forests that benefit the state of Washington and its citizens. This report demonstrates our findings for 2013, the most current year of data available.

Data Sources

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

1. 2013 County Business Patterns Data by county and NAICS code, U.S. Census Bureau (CBP)
2. 2013 State Quarterly Census of Employment and Wages by county and NAICS code, Bureau of Labor Statistics (QCEW)
3. 2013 U.S. Import and Export Merchandise trade statistics by port and commodity, U.S. Census Bureau
4. Regional Input-Output Modeling System (RIMS II), Bureau of Economic Analysis
5. 2013 Public and Private Harvest Statistics, Washington State Department of Revenue
6. 2013 Gross Business Income, Washington State Department of Revenue
7. 2013 Valuation of Privately-Owned Designated Forestland, Washington State Department of Revenue
8. 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 2013 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:

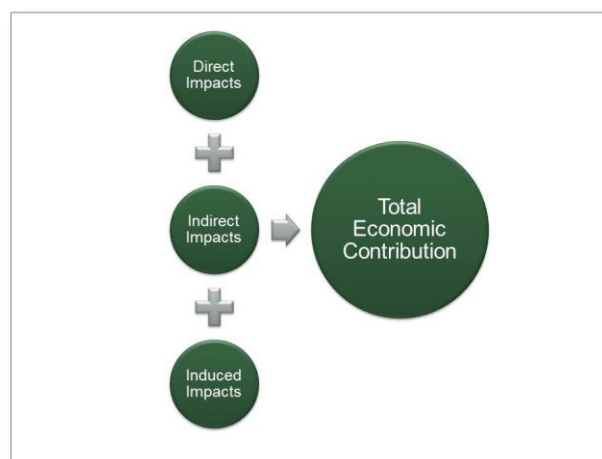
NAICS Code	Meaning
113	Forestry and logging
1153	Support activities for forestry
321	Wood product manufacturing
322	Paper manufacturing
42331	Lumber, plywood, millwork, and wood panel merchant wholesalers
4241	Paper and paper product merchant wholesalers
33711	Wood kitchen cabinet and countertop manufacturing
337122	Nonupholstered wood household furniture manufacturing
337211	Wood office furniture manufacturing
337212	Custom architectural woodwork and millwork manufacturing
4883	Support activities for water transportation
483111	Deep sea freight transportation

Step Four: Data Collection

Employment and wage data for all industries except the port-related industries of 4883 and 483111 are either actual or estimated totals sourced from the CBP (Source 1) or the QCEW (Source 2). In order to determine the amount of port-related jobs and wages associated with forestry, Forest2Market used U.S. Import and Export Merchandise trade statistics published by the U.S. Census Bureau (Source 3) as a starting point. First, Forest2Market determined a list of forestry-related commodities to incorporate in the analysis. Second, Forest2Market determined the vessel weight of the forestry-related commodities compared to the total vessel weight of all commodities shipped through each port. Third, Forest2Market applied this proportion to the number of jobs and wages in industry 4883 and 483111 for each county containing a port to determine the number of port jobs and wages attributable to forestry-related industries.

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 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 2013, forestry-related industries in Washington directly employed 41,466 people. Total compensation for these jobs was over \$2.3 billion.

Washington State, 2013	
Economic Impact of Forestry-Related Activities	
Stumpage Sales	\$945,529,138
Direct Jobs	41,466
Total Direct, Indirect, and Induced Jobs	104,986
Direct Wages	\$2,327,592,196
Total Direct, Indirect, and Induced Wages	\$4,879,645,181
Total Revenue	\$26,526,175,095
Total Taxes	\$200,829,823

The total direct, indirect and induced impact of forestry-related industries included 104,986 jobs paying nearly \$4.9 billion in wages. Annual sales in forestry-related industries totaled nearly \$27 billion, and these industries paid more than \$200 million in taxes in 2013.

Employment and Wages by County

This table shows a breakout of direct and total employment and wages by county.

County	Direct Jobs	Direct, Indirect, Induced Jobs	Direct Wages	Direct, Indirect, Induced Wages
Adams	22	40	\$1,038,859	\$1,673,720
Asotin	70	128	\$2,726,415	\$4,623,847
Benton	314	561	\$16,356,072	\$25,084,613
Chelan	337	506	\$14,829,435	\$19,433,300
Clallam	1,229	2,854	\$63,026,880	\$130,090,033
Clark	2,960	9,201	\$162,681,271	\$368,933,508
Columbia	28	48	\$1,318,922	\$2,095,936
Cowlitz	4,297	13,084	\$355,137,855	\$822,391,223
Douglas	58	89	\$2,845,831	\$3,900,071
Ferry	210	515	\$9,409,759	\$20,804,386
Franklin	175	345	\$9,905,964	\$16,127,416
Garfield	10	14	\$340,912	\$486,652
Grant	158	254	\$9,608,729	\$13,214,608
Grays Harbor	1,911	4,902	\$98,366,466	\$217,650,604
Island	212	540	\$12,661,818	\$24,846,607
Jefferson	295	798	\$15,497,841	\$31,770,069
King	6,420	16,630	\$429,186,511	\$860,613,490
Kitsap	317	670	\$14,568,310	\$27,119,557
Kittitas	211	456	\$7,339,121	\$14,876,517
Klickitat	517	1,399	\$24,256,707	\$58,148,003
Lewis	2,477	5,869	\$124,942,030	\$282,269,024
Lincoln	22	59	\$1,038,859	\$2,427,114
Mason	1,212	3,113	\$59,595,270	\$135,942,869
Okanogan	289	450	\$10,137,160	\$14,587,443
Pacific	442	1,009	\$22,236,438	\$45,781,044
Pend Oreille	303	725	\$16,028,823	\$30,026,082
Pierce	4,816	12,667	\$263,883,163	\$558,713,811
San Juan	59	142	\$2,605,897	\$5,404,511
Skagit	1,067	2,766	\$53,935,946	\$123,513,305
Skamania	378	935	\$18,179,396	\$39,486,132
Snohomish	2,490	6,289	\$127,348,868	\$275,714,915
Spokane	1,983	4,223	\$81,142,674	\$141,964,591
Stevens	747	1,738	\$34,968,978	\$74,892,447
Thurston	1,302	2,908	\$65,638,702	\$123,569,363
Wahkiakum	179	345	\$7,921,698	\$15,664,295
Walla Walla	887	1,924	\$49,753,733	\$82,517,364
Whatcom	1,594	4,079	\$69,228,448	\$156,829,821
Whitman	44	102	\$2,264,448	\$4,411,137
Yakima	1,424	2,609	\$65,637,989	\$102,045,753
Total	41,466	104,986	\$2,327,592,196	\$4,879,645,181

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 industries in 2013 by county. Annual revenue data are allocated to each county using the ratio of the county's direct wages to the state total wages.

County	Annual Revenues
Adams	\$11,839,249
Asotin	\$31,071,325
Benton	\$186,400,359
Chelan	\$169,002,193
Clallam	\$718,279,628
Clark	\$1,853,981,070
Columbia	\$15,030,966
Cowlitz	\$4,047,293,563
Douglas	\$32,432,236
Ferry	\$107,237,393
Franklin	\$112,892,347
Garfield	\$3,885,170
Grant	\$109,504,929
Grays Harbor	\$1,121,023,736
Island	\$144,299,164
Jefferson	\$176,619,620
King	\$4,891,181,781
Kitsap	\$166,026,310
Kittitas	\$83,639,572
Klickitat	\$276,439,172
Lewis	\$1,423,889,529
Lincoln	\$11,839,249
Mason	\$679,171,622
Okanogan	\$115,527,149
Pacific	\$253,415,371
Pend Oreille	\$182,670,901
Pierce	\$3,007,318,463
San Juan	\$29,697,845
Skagit	\$614,675,696
Skamania	\$207,179,699
Snohomish	\$1,451,318,821
Spokane	\$924,734,484
Stevens	\$398,520,516
Thurston	\$748,044,995
Wahkiakum	\$90,278,845
Walla Walla	\$567,013,514
Whatcom	\$788,955,186
Whitman	\$25,806,553
Yakima	\$748,036,874
Total	\$26,526,175,095

Taxes by County

This table breaks out, by county, the value of stumpage sales, stumpage taxes (i.e. forest harvest excise taxes that are paid in lieu of property taxes) paid and property taxes paid by forest landowners in 2013.

County	Stumpage Sales	Stumpage Taxes	Property Taxes	Total Actual Taxes
Adams	\$0	\$0	\$0	\$0
Asotin	\$18,327	\$916	\$0	\$916
Benton	\$0	\$0	\$0	\$0
Chelan	\$4,552,585	\$227,629	\$18,872	\$246,501
Clallam	\$60,569,455	\$3,028,472	\$328,069	\$3,356,541
Clark	\$28,297,425	\$1,414,870	\$141,422	\$1,556,292
Columbia	\$11,547	\$577	\$10,006	\$10,584
Cowlitz	\$90,893,793	\$4,544,689	\$752,813	\$5,297,501
Douglas	\$0	\$0	\$285	\$285
Ferry	\$6,492,451	\$324,622	\$26,186	\$350,808
Franklin	\$0	\$0	\$0	\$0
Garfield	\$91,971	\$4,599	\$493	\$5,092
Grant	\$0	\$0	\$0	\$0
Grays Harbor	\$96,559,356	\$4,827,967	\$1,177,154	\$6,005,121
Island	\$2,213,252	\$110,662	\$7,622	\$118,285
Jefferson	\$33,709,299	\$1,685,465	\$160,012	\$1,845,477
King	\$35,494,204	\$1,774,710	\$297,405	\$2,072,115
Kitsap	\$13,052,484	\$652,624	\$67,274	\$719,897
Kittitas	\$2,338,862	\$116,943	\$24,219	\$141,162
Klickitat	\$29,663,585	\$1,483,179	\$125,336	\$1,608,515
Lewis	\$136,523,239	\$6,826,160	\$930,901	\$7,757,062
Lincoln	\$418,961	\$20,948	\$0	\$20,948
Mason	\$38,751,721	\$1,937,586	\$413,107	\$2,350,693
Okanogan	\$5,394,691	\$269,734	\$16,727	\$286,461
Pacific	\$91,258,855	\$4,562,942	\$696,842	\$5,259,784
Pend Oreille	\$12,789,326	\$639,465	\$80,767	\$720,232
Pierce	\$39,248,536	\$1,962,426	\$613,631	\$2,576,057
San Juan	\$192,558	\$9,628	\$7,298	\$16,926
Skagit	\$34,658,538	\$1,732,926	\$293,193	\$2,026,119
Skamania	\$27,980,719	\$1,399,036	\$106,312	\$1,505,347
Snohomish	\$46,390,081	\$2,319,503	\$163,755	\$2,483,258
Spokane	\$5,235,256	\$261,762	\$72,622	\$334,385
Stevens	\$23,754,888	\$1,187,743	\$181,428	\$1,369,171
Thurston	\$29,963,431	\$1,498,171	\$208,267	\$1,706,437
Wahkiakum	\$23,985,542	\$1,199,277	\$149,934	\$1,349,211
Walla Walla	\$0	\$0	\$3,436	\$3,436
Whatcom	\$22,195,484	\$1,109,774	\$127,080	\$1,236,854
Whitman	\$0	\$0	\$0	\$0
Yakima	\$2,828,717	\$141,436	\$20,934	\$162,370
Total	\$945,529,138	\$47,276,440	\$7,223,402	\$54,499,842

This table breaks out, by county, the other taxes paid to state and county governments as the result of forestry-related activities in 2013. Statewide totals are allocated to each county using the same process as annual revenues.

County	B&O Taxes	Retail Sales Taxes	PUT	Other Fees/ Assessments*	Fire Protection	Total Est. Taxes
Adams	\$28,714	\$30,904	\$586	\$628	\$4,478	\$65,310
Asotin	\$75,357	\$81,106	\$1,539	\$1,649	\$11,753	\$171,403
Benton	\$452,075	\$486,564	\$9,231	\$9,891	\$70,505	\$1,028,266
Chelan	\$409,880	\$441,149	\$8,369	\$8,968	\$63,924	\$932,290
Clallam	\$1,742,038	\$1,874,937	\$35,569	\$38,114	\$271,686	\$3,962,345
Clark	\$4,496,446	\$4,839,477	\$91,809	\$98,379	\$701,260	\$10,227,370
Columbia	\$36,454	\$39,236	\$744	\$798	\$5,685	\$82,917
Cowlitz	\$9,815,869	\$10,564,716	\$200,422	\$214,764	\$1,530,871	\$22,326,641
Douglas	\$78,658	\$84,658	\$1,606	\$1,721	\$12,267	\$178,910
Ferry	\$260,082	\$279,924	\$5,310	\$5,690	\$40,562	\$591,568
Franklin	\$273,797	\$294,685	\$5,590	\$5,990	\$42,701	\$622,764
Garfield	\$9,423	\$10,142	\$192	\$206	\$1,470	\$21,432
Grant	\$265,581	\$285,842	\$5,423	\$5,811	\$41,420	\$604,077
Grays Harbor	\$2,718,810	\$2,926,226	\$55,513	\$59,485	\$424,022	\$6,184,057
Island	\$349,968	\$376,666	\$7,146	\$7,657	\$54,581	\$796,017
Jefferson	\$428,354	\$461,033	\$8,746	\$9,372	\$66,806	\$974,311
King	\$11,862,545	\$12,767,531	\$242,211	\$259,543	\$1,850,068	\$26,981,897
Kitsap	\$402,662	\$433,381	\$8,222	\$8,810	\$62,799	\$915,874
Kittitas	\$202,850	\$218,326	\$4,142	\$4,438	\$31,636	\$461,392
Klickitat	\$670,446	\$721,594	\$13,689	\$14,669	\$104,562	\$1,524,959
Lewis	\$3,453,348	\$3,716,802	\$70,511	\$75,557	\$538,580	\$7,854,797
Lincoln	\$28,714	\$30,904	\$586	\$628	\$4,478	\$65,310
Mason	\$1,647,190	\$1,772,853	\$33,633	\$36,039	\$256,894	\$3,746,608
Okanogan	\$280,187	\$301,562	\$5,721	\$6,130	\$43,698	\$637,298
Pacific	\$614,606	\$661,494	\$12,549	\$13,447	\$95,853	\$1,397,950
Pend Oreille	\$443,030	\$476,829	\$9,046	\$9,693	\$69,094	\$1,007,693
Pierce	\$7,293,626	\$7,850,052	\$148,922	\$159,579	\$1,137,505	\$16,589,684
San Juan	\$72,026	\$77,521	\$1,471	\$1,576	\$11,233	\$163,826
Skagit	\$1,490,768	\$1,604,498	\$30,439	\$32,617	\$232,498	\$3,390,820
Skamania	\$502,471	\$540,805	\$10,260	\$10,994	\$78,365	\$1,142,894
Snohomish	\$3,519,872	\$3,788,401	\$71,869	\$77,012	\$548,955	\$8,006,109
Spokane	\$2,242,751	\$2,413,849	\$45,793	\$49,070	\$349,777	\$5,101,240
Stevens	\$966,529	\$1,040,265	\$19,735	\$21,147	\$150,739	\$2,198,413
Thurston	\$1,814,228	\$1,952,634	\$37,043	\$39,694	\$282,945	\$4,126,543
Wahkiakum	\$218,953	\$235,656	\$4,471	\$4,791	\$34,148	\$498,018
Walla Walla	\$1,375,173	\$1,480,085	\$28,078	\$30,088	\$214,470	\$3,127,894
Whatcom	\$1,913,447	\$2,059,422	\$39,069	\$41,865	\$298,419	\$4,352,222
Whitman	\$62,588	\$67,363	\$1,278	\$1,369	\$9,761	\$142,360
Yakima	\$1,814,208	\$1,952,613	\$37,043	\$39,693	\$282,942	\$4,126,498
Total	\$64,333,723	\$69,241,704	\$1,313,574	\$1,407,572	\$10,033,408	\$146,329,981

*Includes Forest Practices Application Fee, Silviculture Burning Permits, and O/tax (litter, motor vehicle, hazardous substance, etc.).

The total of both actual and estimated taxes paid by industry participants totaled nearly \$201 million in 2013.

County	Total Actual Taxes	Total Est. Taxes	Total Actual & Est. Taxes
Adams	\$0	\$65,310	\$65,310
Asotin	\$916	\$171,403	\$172,319
Benton	\$0	\$1,028,266	\$1,028,266
Chelan	\$246,501	\$932,290	\$1,178,791
Clallam	\$3,356,541	\$3,962,345	\$7,318,886
Clark	\$1,556,292	\$10,227,370	\$11,783,662
Columbia	\$10,584	\$82,917	\$93,501
Cowlitz	\$5,297,501	\$22,326,641	\$27,624,142
Douglas	\$285	\$178,910	\$179,195
Ferry	\$350,808	\$591,568	\$942,376
Franklin	\$0	\$622,764	\$622,764
Garfield	\$5,092	\$21,432	\$26,524
Grant	\$0	\$604,077	\$604,077
Grays Harbor	\$6,005,121	\$6,184,057	\$12,189,178
Island	\$118,285	\$796,017	\$914,302
Jefferson	\$1,845,477	\$974,311	\$2,819,788
King	\$2,072,115	\$26,981,897	\$29,054,012
Kitsap	\$719,897	\$915,874	\$1,635,771
Kittitas	\$141,162	\$461,392	\$602,555
Klickitat	\$1,608,515	\$1,524,959	\$3,133,474
Lewis	\$7,757,062	\$7,854,797	\$15,611,859
Lincoln	\$20,948	\$65,310	\$86,259
Mason	\$2,350,693	\$3,746,608	\$6,097,300
Okanogan	\$286,461	\$637,298	\$923,759
Pacific	\$5,259,784	\$1,397,950	\$6,657,734
Pend Oreille	\$720,232	\$1,007,693	\$1,727,925
Pierce	\$2,576,057	\$16,589,684	\$19,165,741
San Juan	\$16,926	\$163,826	\$180,752
Skagit	\$2,026,119	\$3,390,820	\$5,416,939
Skamania	\$1,505,347	\$1,142,894	\$2,648,241
Snohomish	\$2,483,258	\$8,006,109	\$10,489,367
Spokane	\$334,385	\$5,101,240	\$5,435,624
Stevens	\$1,369,171	\$2,198,413	\$3,567,584
Thurston	\$1,706,437	\$4,126,543	\$5,832,981
Wahkiakum	\$1,349,211	\$498,018	\$1,847,229
Walla Walla	\$3,436	\$3,127,894	\$3,131,330
Whatcom	\$1,236,854	\$4,352,222	\$5,589,075
Whitman	\$0	\$142,360	\$142,360
Yakima	\$162,370	\$4,126,498	\$4,288,869
Total	\$54,499,842	\$146,329,981	\$200,829,823



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