



Agriculture, Food, Forestry and Fishing in the Northwest U.S. An Economic Overview Executive Summary

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The natural resources sector, the combined value of agriculture, food and fiber, forestry and wood products and fishing and seafood manufacturing sectors, in the five state region of Alaska, Idaho, Montana, Oregon and Washington states is diverse. This report estimates the economic contributions of these sectors to the rest of the economy within each state and within the region. All of the analyses in this document are produced using an input-output framework with the 2013 IMPLAN modeling software.

The Natural Resource Sector Contains or Supports Approximately One-Fifth of all Regional Economic Activity

The natural resources sector provides a direct economic benefit by employing over 500,000 people and had a combined value of 112.9 billion in total sales. In addition, these sectors supported a number of additional industries throughout the region. This related economic activity includes purchases made by natural resources sectors from other businesses and the spending of households who receive wages or other income. The natural resources sector has a job multiplier of 1.8 which indicates that for every job within the sector another 0.8 jobs are created in other industries which support the activity within natural resources. A total of nearly 886,000 people work directly in or support the functions of the natural resources sector - this represents 10.6 percent of all jobs within the five state region. An estimated 12.2 percent of all sales and 10.6 percent of all jobs in the regional economy are directly generated in or linked to the production, processing and services within the natural resources sector.

Table 1: Summary of the Regional Natural Resource Sector (2015 dollars)

Natural Resources in the Northwest 5 State Region	Full & Part-time Jobs	Sales (\$000)	Value- added portion of sales (\$000)
Direct economic activity	500,049	112,940,024	36,176,802
Related economic activity	385,902	63,110,165	36,851,929
Total economic contribution	885,951	176,050,189	73,028,731
Multiplier	1.8	1.6	2.0
Total Northwest Economy	8,327,408	1,442,482,947	800,119,031
Natural resources as a percentage of Total Northwest Regional Economy	10.6%	12.2%	9.1%

Seventy Percent of all Natural Resources Activity is in Agriculture, Food and Fiber

Within the three primary components of the natural resources sector, nearly seventy percent of total output and total jobs came from agriculture, food and fiber and related processing and services. This sector alone represents 8.3 percent of total sales and 7.5 percent of all jobs within the five state region. This sector has slightly smaller multipliers than the other two sectors. The growth and harvest of forestry and wood products including processing is the second largest natural resources sector. This sector and its related economic activity contributed a total of 42 billion in sales or approximately 24 percent of the natural resources sector and 189,000 jobs or 21 percent of total employment in the sector. Placing these values within the context of the entire regional economy shows that the sector provides 2.9 percent of all sales and 2.3 percent of all jobs. The fishing and seafood manufacturing sector is the smallest among the three natural resource sectors. Sales and jobs within this sector represent 1 percent or less of the total five state economy and approximately 8 percent of all activity within natural resources.

Table 2. Northwest Five State Region natural resources sector sales and jobs economic contributions (direct, indirect, induced effects) in 2015 dollars

Sales by Sector	Multiplier	All Direct and Related Sales (\$000)	% of	
			Natural Resources Sector	% of Total Regional economy
Agriculture, food and fiber	1.52	120,146,551	68.2	8.3
Forestry and wood products	1.91	41,983,083	23.8	2.9
Fishing and seafood manufacturing	1.59	13,920,555	7.9	1.0
Totals			176,050,189	1,442,482,947

Jobs by Sector	Multiplier	All Direct and Related Full & Part-time Jobs	% of	
			Natural Resources Sector	% of Total Regional economy
Agriculture, food and fiber	1.67	621,518	70.2	7.5
Forestry and wood products	2.21	189,017	21.3	2.3
Fishing and seafood manufacturing	1.78	75,416	8.5	0.9
Totals			885,951	8,327,408

Washington and Oregon Have the Largest Natural Resource Sectors, 65% of the Region Total

Washington and Oregon have the two largest natural resources sectors within the region and together contain approximately 65 percent of all economic activity occurring within natural resources. By comparison Idaho and Montana have similar employment levels with 77,000 and 63,000 jobs respectively – and are larger than the smallest state Alaska. Total sales in Idaho are 2.8 times as large as sales in Montana which indicates that the natural resources sector is less labor intensive and includes more high value production in Idaho than Montana.

Table 5: Natural resources sectors' employment, sales and value-added in 2015 dollars

Direct Effects Only	Full & Part-time Jobs	Sales (\$000)	Value-added portion of sales (\$000)
Alaska	45,036	5,909,045	1,858,869
Idaho	76,374	22,754,412	6,666,010
Montana	63,360	8,055,439	2,117,542
Oregon	147,591	32,377,366	10,568,105
Washington	200,770	42,416,693	13,339,312
Northwest natural resources	533,131	111,512,955	34,549,838
Total Northwest Economy	8,327,408	1,442,482,947	800,119,031
Natural resource percentage of Northwest Economy	6.4%	7.7%	4.3%

The amount of additional economic activity that is linked to the natural resources sector depends on the initial size of the sector, the completeness of the rest of the economy and the degree of labor intensity behind the production. Washington and Oregon illustrate these points. The larger the initial size of the sector the larger the spillover benefits will be as there are more businesses that are buying and selling and more people who are earning wages and income from the production.

As noted earlier, Washington and Oregon have the largest natural resources sectors they also have more related economic activity than the other states. In the smaller states natural resource businesses may import inputs more often lowering their employment and sales multipliers within their respective states. States which have a higher concentration of economic activity in labor intensive industries – partially seen in the size of the value added portion of sales column – will also have more additional related activity as households will receive a higher percentage of total sales and make more purchases.

Table 7: Natural resources sectors' economic contributions in 2015 dollars

Direct, Indirect and Induced Effects	Full & Part-time Jobs	Sales (\$000)	Value-added portion of sales (\$000)
Alaska	64,034	8,914,830	3,539,710
Idaho	143,611	31,790,880	11,816,374
Montana	85,037	11,075,130	3,836,133
Oregon	256,423	48,500,446	19,857,258
Washington	303,321	58,815,236	24,403,264
Northwest natural resources*	885,951	176,050,189	73,028,731
Total Northwest Economy	8,327,408	1,442,482,947	800,119,031
Natural resources as a % of Regional Economy	10.6%	12.2%	9.1%

* Northwest natural resources numbers are larger than the sum of the states because they include economic linkages among states

Sixty Percent of All Natural Resource Sales are Exported

Exports are sales to other states in the US and other countries and are included in the total sales values above. Do not add these values to the values from any other table. Natural resource exports were worth an estimated \$67.4 billion dollars and represented 15 percent of all exports from the region. Similar to overall output, a two-thirds majority of all exports come from the aggregated agricultural, food and fiber sector. The forestry and wood products sector exported \$15.3 billion in total sales and fishing and the smallest sector, seafood manufacturing, exported \$7.4 billion.

Large portions of the total sales, 60 percent on average, within the natural resources sector are exported. By comparison, on average 31 percent of all goods and services produced in the five state region are exported. The percent of total sales that are exported range from a high of 89 percent of the seafood manufacturing sector to a low of 55 percent of agricultural farm gate production.

The five states have similar export patterns and total natural resource exports vary based on the overall size of the economy. Alaska exports a higher share of all natural resources than the other states. Natural resource exports are nearly one-half of all state exports, the highest percentage in the region. In the regional model when Oregon exports to Washington, these sales are not considered exports; therefore, total exports and activity supporting exports is smaller in the five state region than the sum of all five states.

Table 9: Value of natural resources exports (domestic and international) in 2015 dollars

Direct Effects Only	Natural Resource Export sales (\$000)	% of Total Natural Resource Production	% of Total Exports
Alaska	5,042,766	85.3	10.7
Idaho	17,445,763	76.6	34.0
Montana	5,935,703	73.7	17.6
Oregon	23,013,839	71.1	16.4
Washington	22,944,873	54	8.6
Northwest Region*	67,396,941	59.7	15.0

* Total regional natural resource exports are smaller than the sum of the states, since it does not include exports among NW states.