

**The Economic Contribution of Agriculture, Forestry and Fishing   
in the West**

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# Introduction

This report summarizes an input-output (I-O) analysis that estimates the economic contributions of agriculture, forestry and fishing to the rest of the economy within Alaska, Arizona, California, Idaho, Montana, Oregon, and Washington, and also the seven-state region composed by these states. Unless otherwise noted, all data are produced using a social accounting matrix framework with IMPLAN[[1]](#footnote-2) modeling software. This report can be used for policy and educational purposes within the limits of the analysis. This report has no formal conclusion as it is meant to be the start of conversations and to inform other work. It does not model a scenario or make extensive cross-state comparisons. Guidance on how to interpret the data is provided in the report.

# Definitions

**Economic contributions or total effects:** These values include direct effects, indirect effects, and induced effects. Indirect and induced effects (together “related economic activity”) are not shown separately in this document and are generally combined with the direct effects as total effects.

**Direct effects:** Employment, wages, and output of the industry being analyzed including the jobs, sales and valued-added sales (defined below) that come from selling an industry’s products or services. Direct effects are used in the model to estimate other economic activity associated with the industry.

**Indirect effects:** The inter-industry or supplier effects in an input-output analysis that considers the jobs, wages, and output created by the supply-chain businesses which provide goods and services essential to the industry. In other words, indirect effects are the value of output that comes from other sectors within the region to support production in the industry of study (i.e., direct effects\_. Examples include suppliers of raw materials, utilities, equipment, transportation, and other services.

**Induced effects**: The result of the spending of wages and salaries of direct (industry engaged in production) and indirect (supply-chain businesses) employees on household expenditures such as food, housing, education, transportation and medical services. This spending creates induced employment (i.e., supports jobs) in nearly all sectors of the economy, especially services.

**Exports:** The amount of production that is exported out of a given area (e.g., state or region). Exports include sales made to the rest of the United States (i.e., domestic exports) and to the world (i.e., foreign exports).

**Full and Part-time Jobs:** The estimate of total employment by industry in IMPLAN is equivalent to the annual average of monthly jobs in that industry. This is the same definition used by the Quarterly Census of Employment and Wages, Bureau of Labor Statistics and Bureau of Economic Analysis. One full-time job is counted the same as a part-time job. Accordingly, estimates of employment should be interpreted as a mixture of full-time and part-time jobs.

**Multipliers:** This report calculates multipliers by dividing the total effect by the direct effect. These multipliers provide a complete view of the economy by including not only the additional economic activity that is generated within other industries (indirect effects), but also the economic activity generated by households with labor income (induced effects).

**Sales:** A measure of total output that is the market value of all goods and services sold by an industry shown in 2021 dollars. All sales values have been divided by 1,000 to simplify the table format. Sales are one of the metrics used to measure direct, indirect (suppliers) and induced (household spending) effects.

**Total size of the economy:** An estimate of all of the jobs, sales and value-added dollars produced within a region. This value is taken from IMPLAN.

**Value-added portion of sales:** The net output of a defined economy (e.g., industry, state, or country), calculated as the difference between an industry’s total output (e.g., sales) and the cost of its intermediate inputs (e.g., consumption of goods and services from other sectors). Value-added serves as a measure of economic activity comparable to Gross Domestic Product (GDP) or Gross State Product (GSP). Value-added encompasses Labor Income (LI), Proprietor Income (PI), Employee Compensation (EC), Other Property Income (OPI), and Taxes on Production and Imports (TOPI). All values are 2021 dollars and should be multiplied by 1,000 for interpretation.

# Data Sources

The main data source for this report is IMPLAN Cloud. Numbers in the IMPLAN model were verified using different secondary data sources. Employment across industries was verified using total employment by industry from the Bureau of Economic Analysis (BEA). Agricultural sales were confirmed using the 2017 USDA Agricultural Census and respective state departments of agricultural statistical services. Total sales for commercial fishing were verified using the dollar landings value of all fish species from the Atmospheric Administration (NOAA).

# Methodology

All results in this report were constructed using models created in the IMPLAN Cloud. The models were edited to avoid overstating the amount of economic activity that can be attributed to natural resources producing a conservative estimate of economic contribution. For example, farm gate agricultural production includes both the cattle and grains sectors. The cattle sector purchases inputs from the grain sector, and the grain sector sells part of its production to the cattle sector. These linkages are counted once in the overall size of farm gate production. The total effect for the cattle and grains industries captures the additional economic activity outside the farm gate and other natural resource sectors that directly support these industries (truck transportation, land buying, and leasing, etc.) as indirect effects. Total effects will also include induced effects, or the purchases made by households who work or are owners within the natural resource sectors or in businesses, included in the indirect effects.

Additional modeling decisions:

* Most industries were modeled using IMPLAN default data unless more accurate state agency data could be found.
* Activities were modeled in a user-defined aggregated IMPLAN model; modified sector aggregations are listed in the Appendix.
* Activities for each aggregated sector use 2021 output, employment, and value-added data

Reporting decisions:

* All dollar values are rounded to the nearest one thousand.
* Most results are shown only for the aggregated natural resource sector and not by individual industries due to limited ground-truthing of data by industry.

## Industry Scope

This analysis includes the natural resource-based sectors of agriculture, food manufacturing, forestry, wood and paper products, fishing, and seafood manufacturing. For each primary sector, a set of related manufacturing industries were chosen based on the likelihood that these industries could use inputs from the natural resource sector produced within the state (see the Appendix for a list of included industries). It is reasonable to assume that the presence of these related manufacturing businesses is at least partially attributed to each state having an advantage in producing the primary commodity. Agricultural inputs are used widely across the economy, and this set of industries does not include all businesses which utilize agricultural, forestry, or fishing commodities; in this way, the total contribution of the industry to the economy will be understated. For example, furniture is excluded from the analysis due to the many different materials used in the manufacturing process. This understates wood and wood products used to create furniture. In other cases, this report will overestimate the total contribution of each primary sector to the extent that the chosen related manufacturing industries utilize non-natural resource inputs or natural resource inputs produced outside of the state. Tracing the economic value of the agricultural products does not include products produced in the state that are sold at a retailer or served in a restaurant.

Results are reported as aggregate totals by the primary natural resource sector. The agriculture, food manufacturing, forestry, and wood and paper products sectors contain multiple industries, while all economic activity in fishing and seafood manufacturing is included within a single sector: commercial fishing or seafood manufacturing. These limitations are inherent in the IMPLAN data system, which has classified all economic activity into one of 526 sectors based on the NAICS classification code, which captures a business’ primary output. These categories may not always be intuitive to the reader, and readers are encouraged to consult the Appendix for clarification of what economic activity is contained in which industry. Those interested in a detailed analysis of a single industry can use IMPLAN but must undertake a significantly more resource-intensive data collecting process to create a new industry or modify an existing industry accurately.

## IMPLAN Assumptions and Limitations

The IMPLAN software makes a number of assumptions about the economy in order to create the input-output model. Some of these major assumptions include:

1. Fixed production functions for all firms within a sector, each business produces a homogeneous good or product with the same ratios of inputs.
2. Homogeneity among goods and services within an industry, all goods and services have the same quality, durability and value.
3. Constant returns to scale, inputs do not change based on the size of the total sector or the size of businesses within the sector, costs for inputs and labor are unchanged based on size of the firm or the total output.
4. The homogeneity of goods and services assumption does not allow cross hauling. If a product is produced and used in a region it is assumed that purchasers of the product will always buy local first before importing. Similarly, broad industry categories that contain multiple products may imply that a product is available locally when it is not.

The agriculture industry presents specific challenges including:

1. Limitations to the quality and frequency of available data, especially for specialty commodities.
2. The total value of sales reflects the market value of products sold and does not always capture products consumed for on farm use.
3. There is no established method to account for government subsidies. This indirectly appears under “taxes” where noticeably the grains sector contains a negative number and other less heavily subsidized crops contain positive numbers.
4. Broad industry categories that group together a wide range of commodities and base production functions and output per worker values on national averages of those commodity groups which might be more or less reflective of the commodity mix in a particular region.

The IMPLAN methodology changed in 2020. This means that past studies commissioned by AgWest Farm Credit (formerly Northwest Farm Credit Services) should be used with caution when making year-over-year comparisons. IMPLAN updated its algorithm and moved some sectors from one report to another to avoid overestimating the industry impact without manual intervention.

# Results

Table 1 provides an overview of the natural resources sector within the seven-state region. The natural resource sector includes the value of agriculture and food manufacturing, forestry and wood products, fishing, and seafood manufacturing sectors. These sectors provide a **direct** **economic** benefit by employing 1.4 million people and $340.3 billion in sales. The value-added portion of sales (net output) shows that the natural resources sectors **directly** provide $130.9 billion toward the seven-state region’s Gross Domestic Product.

Additionally, these sectors support many other 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 in the AgWest seven-state region supports an additional 969,956 jobs, generates an additional $216.2 billion in sales, and contributes an additional $134.1 billion toward the seven-state region’s Gross Domestic Product.

Direct economic activity plus related economic activity is the **economic contribution,** or **total effects** of the natural resources industries. In total, the natural resources industries within the seven-state region contribute 2.4 million jobs, $556.5 billion in sales, and $264.9 billion in value-added sales. This represents 6.5 percent of all jobs , 6.8 percent of all sales, and 5.3% of all value-added activity within the seven-state region.

Dividing the total effects by the direct effect results in the calculation of a **multiplier** for jobs, sales, and the value-added portion of sales for the natural resources industries.

* The job multiplier of 1.7 indicates that for every job within the natural resources, another 0.7 jobs are created in supporting industries.
* The sales multiplier of 1.6 indicates that for every $1.00 in sales generated by the natural resources, $0.60 in sales is generated in supporting industries.
* The value-added multiplier of 2.0 indicates that for every $1 of value-added activity generated by the natural resources an additional $1.00 of value-added activity is generated.

Table . Summary of the Regional Natural Resource Sectors (2021 dollars)

|  |  |  |  |
| --- | --- | --- | --- |
| **Natural Resources in the  AgWest Seven-State Region** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| Direct economic activity | 1,417,196 | 340,290,400 | 130,858,193 |
| Related economic activity | 969,976 | 216,172,340 | 134,015,704 |
| **Economic contribution (total effects)** | **2,387,172** | **556,462,739** | **264,873,897** |
| Multiplier | 1.68 | 1.64 | 2.0 |
| Total seven-state economy | 36,576,267 | 8,175,178,911 | 4,986,785,116 |
| Natural resources % of total AgWest regional (seven-state) economy | 6.5% | 6.8% | 5.3% |

Table 2 (sales) and Table 3 (jobs) provide an overview of the total effects of the three primary sectors of the natural resources industries: agriculture and food processing; forestry and wood products; and fishing and seafood manufacturing. Among the sectors, more than eighty percent of sales and jobs in the natural resources come from agriculture and food manufacturing. This sector alone represents 5.6 percent of total sales and 5.5 percent of all jobs within the seven-state region. Forestry and wood products manufacturing contributes 15.6 percent of sales and 13.0 percent of job in the natural resources. This represents 1.1 percent of all sales and 0.8 percent of all jobs in the regional economy. Fishing and seafood manufacturing sales are 2.9 percent of the natural resources and approximately 0.2 percent of the regional economy. Sector jobs reflect 3.1 percent of the natural resources and 0.2 percent of the regional economy.

Table . AgWest Seven-State Region natural resources sector sales economic contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sales by Sector** | **Multiplier** | **All Direct and Related Sales ($000)** | **% of Natural Resources Sector** | **% of Total Regional Economy** |
| Agriculture and food processing. | 1.63 | 453,953,477 | 81.6 | 5.6 |
| Forestry and wood products | 1.68 | 86,595,976 | 15.6 | 1.1 |
| Fishing and seafood mfg. | 1.55 | 15,913,286 | 2.9 | 0.2 |
| **Sectors Total** |  | **556,462,739** | **100** | **6.8** |
| **Total Regional Economy** |  | **8,175,178,911** |  | **100** |

Table . AgWest Seven-State Region natural resources sector jobs economic contributions (direct, indirect, induced effects) in 2021

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Jobs by Sector** | **Multiplier** | **All Direct and Related Full & Part-time Jobs** | **% of Natural Resources Sector** | **% of Total Regional Economy** |
| Agriculture and food processing | 1.65 | 2,003,550 | 83.9 | 5.5 |
| Forestry and wood products mfg. | 2.04 | 310,596 | 13.0 | 0.8 |
| Fishing and seafood mfg. | 1.53 | 73,026 | 3.1 | 0.2 |
| **Sectors Total** |  | **2,387,172** | **100** | **6.5** |
| **Total Regional Economy** |  | **36,576,267** |  | **100** |

## Overview of Agriculture Production

Table 4 is based on data from the 2017 Census of Agriculture to provide additional background about the scope of the agriculture industry. The 2022 Census of Agriculture will be published in 2024. No comparable single data source exists for the food processing, or forestry and seafood production and processing.

Table . Farm Characteristics by State and Region

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Alaska** | **Arizona** | **California** | **Idaho** | **Montana** | **Oregon** | **Washington** | ***Region Total or Average*** |
| Farms (number) | 990 | 19,086 | 70,521 | 24,996 | 27,048 | 37,616 | 35,793 | 216,050 |
| Land in farms (acres) | 849,753 | 26,125,819 | 24,522,801 | 11,691,912 | 58,122,878 | 15,962,322 | 14,679,857 | 151,955,342 |
| % of cropland acres irrigated | 2.9% | 70.8% | 81.6% | 57.7% | 12.6% | 35.2% | 22.6% | 40.5% |
| Average size of farm (acres) | 858 | 1,369 | 348 | 468 | 2,149 | 424 | 410 | 861 |
| Farms by size |  |  |  |  |  |  |  |  |
| 1 to 9 acres | 43% | 49% | 33% | 27% | 9% | 33% | 32% | 32% |
| 10 to 49 acres | 24% | 20% | 31% | 29% | 22% | 34% | 34% | 28% |
| 50 to 179 acres | 16% | 9% | 16% | 17% | 16% | 16% | 15% | 15% |
| 180 to 499 acres | 9% | 6% | 9% | 11% | 13% | 7% | 7% | 9% |
| 500 to 999 acres | 4% | 5% | 4% | 6% | 8% | 3% | 3% | 5% |
| 1,000 acres or more | 4% | 11% | 6% | 10% | 32% | 6% | 7% | 11% |
| Avg. market value of ag land and buildings per acre (dollars) | $718 | $811 | $9,353 | $2,866 | $916 | $2,433 | $2,789 | $2,841 |
| Total market value of agricultural products sold ($1,000) | $70,459 | $3,852,008 | $45,154,359 | $7,567,439 | $4,230,083 | $4,883,674 | $9,120,749 | $74,878,771 |
| Avg. market value of ag products sold per farm | $71,171 | $201,824 | $640,297 | $302,746 | $130,162 | $133,104 | $269,172 | $249,782 |
| Crops as a % of market value | 42% | 54% | 74% | 42% | 45% | 66% | 72% | 57% |
| Livestock as a % of market value | 58% | 46% | 26% | 58% | 55% | 34% | 28% | 43% |

Source: 2017 Census of Agriculture

Across the region in 2017, approximately $74.9 billion of agricultural products were sold from 216,050 farms covering 151.0 million acres. On average, 57 percent of all sales in the seven-state region came from crops and 43 percent from livestock. Alaska, Idaho, and Montana had higher receipts in livestock, while sales in all other states most heavily weighted towards crops. California produced the most agricultural sales in the region with $45.1 billion; more than all the other states combined. Alaska had the fewest sales at $71.2 million. On a per farm average, California had the highest sales, with more than 2.5 times the regional average.

Nearly 60 percent of all farms in the seven-state region are small. Almost one-in-three farms are between one and nine acres in size. An additional 28 percent of farms are 10 to 49 acres. The average farm size for the region is 861 acres, driven mainly by the prevalence of large farms in Montana. Montana’s agricultural production is primarily focused on dryland crops and livestock. This requires larger a larger land base.

## Natural Resources Within the Larger Economy

Table 5 provides a comparison of the size of natural resource sectors compared to other sectors within the regional economy. The natural resource sectors appear small among this list as they represent a single industry. However, caution should be used in making comparisons. One of the largest sectors, other manufacturing, contains 260 different manufacturing industries including aerospace. IMPLAN estimates the size of all economic activity within the seven-state region to include approximately 36.6 million full and part-time jobs and $8.2 trillion of sales. The Gross Regional Product, also referred to as the value-added portion of sales, is estimated at $5.0 trillion.

The final column in Table 5 provides a comparison across industries by providing each sector’s share of Gross Regional Product. Food manufacturing at 0.99 percent, and agricultural farm gate production at 0.89 percent, are the largest contributors to Gross Regional Product among the natural resources industries. Together, the natural resources related sectors, highlighted in green, represent 2.6 percent of Gross Regional Product.

Table . AgWest Regional Economy by Sector, 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Seven-State Regional Economy**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000,000)** | **Value-added ($000,000)** | **V.A % of Total Regional Economy** |
| **Total** | **36,576,267** | **8,175,178,911** | **4,986,785,116** | **100** |
| Real Estate and Rental and Leasing | 1,808,714 | 884,551,453 | 599,825,807 | 12.03 |
| Professional, Scientific, and Technical Services | 3,404,981 | 763,150,401 | 547,872,668 | 10.99 |
| Administrative Government | 3,799,057 | 505,446,265 | 505,446,265 | 10.14 |
| Information | 902,220 | 821,756,938 | 460,914,896 | 9.24 |
| Other manufacturing | 1,578,257 | 966,796,633 | 418,567,318 | 8.39 |
| Health Care and Social Assistance | 4,288,235 | 503,972,907 | 345,715,593 | 6.93 |
| Finance and Insurance | 1,658,147 | 546,736,758 | 283,580,311 | 5.69 |
| Retail Trade | 3,032,195 | 421,810,347 | 279,543,496 | 5.61 |
| Wholesale Trade | 1,114,080 | 463,774,734 | 278,823,421 | 5.59 |
| Construction | 2,119,212 | 393,438,229 | 214,928,693 | 4.31 |
| Accommodation and Food Services | 2,675,629 | 273,074,736 | 162,351,899 | 3.26 |
| Administrative and Support and Waste Management and Remediation Services | 2,280,491 | 272,466,390 | 159,263,124 | 3.19 |
| Transportation and Warehousing | 1,869,740 | 263,058,030 | 145,629,603 | 2.92 |
| Other Services (except Public Administration) | 2,238,322 | 200,239,488 | 128,338,931 | 2.57 |
| Management of Companies and Enterprises | 422,230 | 120,501,416 | 79,675,222 | 1.60 |
| Utilities | 95,911 | 123,331,465 | 64,967,802 | 1.30 |
| Government Enterprises | 417,659 | 130,878,907 | 63,877,986 | 1.28 |
| Arts, Entertainment, and Recreation | 742,803 | 79,818,454 | 54,694,249 | 1.10 |
| Food mfg except soft drinks, water, and seafood | 410,525 | 180,727,436 | 49,198,370 | 0.99 |
| Agricultural farmgate production | 498,130 | 81,806,759 | 41,811,673 | 0.84 |
| Educational Services | 627,327 | 48,481,042 | 34,695,422 | 0.70 |
| Mining, Quarrying, and Oil and Gas Extraction | 82,999 | 51,266,679 | 26,901,040 | 0.54 |
| Wood products manufacturing | 110,920 | 47,657,461 | 17,761,476 | 0.36 |
| Support activities for agriculture | 308,752 | 16,036,665 | 15,427,254 | 0.31 |
| Forest products growth and harvest | 25,334 | 3,146,273 | 2,264,497 | 0.05 |
| Commercial fishing | 31,173 | 2,433,231 | 1,810,895 | 0.04 |
| Seafood manufacturing | 16,661 | 7,865,806 | 1,748,495 | 0.04 |
| Support activities for forestry | 15,703 | 616,767 | 835,532 | 0.02 |
| Commercial hunting and trapping | 862 | 337,242 | 313,175 | 0.01 |

## Measuring the Total Size of the Natural Resources Sector

Table 6 provides the estimated size of the natural resources by state and includes direct effects only (i.e., only the activity occurring within the sector). The natural resources produced $340.3 billion in sales across the seven-state region in 2021 dollars. This represents 4.2 percent of the region’s overall output as measured by sales. The natural resources provide 1.4 million jobs or 3.9 percent of all jobs in the region. Value-added sales represent 2.6 percent of the region’s $130.9 billion total. Among the states, California is the dominant player representing nearly 60 percent of all natural resource jobs, sales and value-added activity in the region.

Table . Natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Direct Effects by State** | **Full & Part-time Jobs** | | **Sales ($000)** | | **Value-added ($000)** | |
| Alaska | 25,838 |  | 6,286,553 |  | 1,945,138 |  |
| Arizona | 75,402 |  | 16,811,750 |  | 5,910,823 |  |
| California | 810,470 |  | 196,140,820 |  | 80,788,040 |  |
| Idaho | 83,915 |  | 26,154,199 |  | 7,902,607 |  |
| Montana | 47,196 |  | 7,364,100 |  | 2,399,658 |  |
| Oregon | 161,259 |  | 38,498,688 |  | 14,057,772 |  |
| Washington | 213,119 |  | 49,034,290 |  | 17,854,155 |  |
| **AgWest region’s natural resources** | **1,417,196** |  | **340,290,400** |  | **130,858,193** |  |
| Total AgWest regional economy | 36,576,267 |  | 8,175,178,911 |  | 4,986,785,116 |  |
| Natural resource % of AgWest regional economy | 3.9 |  | 4.2 |  | 2.6 |  |

Table 7 provides the direct effects for the seven-state region by natural resources sector. The results offer a comparison of primary growth and harvest, processing, and support activity components of each sector.

As previously noted, the agriculture and food manufacturing sector is the largest. Within this sector, a majority of all sales, $180.7 billion, came from processing activities. Farm gate production represents $81.9 billion in sales and the highest level of natural resource employment in the region. Overall, the agriculture and food manufacturing sector supports approximately 1.2 million full and part-time jobs.

The second-largest sector, forestry and wood products, accounted for $51.4 billion in sales and supports 151,956 jobs. The wood products manufacturing industry component of this sector contributes 92.7 percent of sales and provides 73.0 percent of the jobs.

The fishing and seafood manufacturing sector supports roughly one-third as many jobs as the forestry and wood products industry and contributes $10.3 billion in total sales. While commercial fishing generates 65.2 percent of the jobs in this sector, manufacturing accounts for 76.4 percent of sales.

The natural resources directly contribute $130.9 billion to the AgWest regional economy, or 2.6% of the nearly $5.0 trillion in regional Gross Domestic Product.

Table . AgWest Seven-State Region natural resource industries' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| Direct Effects by Sector | Full & Part-time Jobs | Sales  ($000) | Value-added ($000) |
| Agriculture and food processing |  |  |  |
| Agricultural farmgate production | 498,130 | 81,806,759 | 41,811,673 |
| Support activities for agriculture | 308,752 | 16,036,665 | 15,427,254 |
| Food mfg. except soft drinks, water, and seafood | 410,525 | 180,727,436 | 49,198,370 |
| Subtotal | **1,217,407** | **278,570,860** | **106,437,297** |
| % of total AgWest regional economy | 3.3 | 3.4 | 2.1 |
| Forestry and wood products |  |  |  |
| Forest products growth and harvest | 25,334 | 3,146,273 | 2,264,497 |
| Support activities for forestry | 15,703 | 616,767 | 835,532 |
| Wood products manufacturing | 110,920 | 47,657,461 | 17,761,476 |
| Subtotal | **151,956** | **51,420,502** | **20,861,505** |
| % of total AgWest regional economy | 0.4 | 0.6 | 0.4 |
| Fishing and seafood manufacturing |  |  |  |
| Commercial fishing | 31,173 | 2,433,231 | 1,810,895 |
| Seafood manufacturing | 16,661 | 7,865,806 | 1,748,495 |
| Subtotal | **47,834** | **10,299,037** | **3,559,391** |
| % of total AgWest regional economy | 0.13 | 0.13 | 0.07 |
| Total natural resources | **1,417,196** | **340,290,400** | **130,858,193** |
| Total seven-state regional economy | 36,576,267 | 8,175,178,911 | 4,986,785,116 |
| Natural resources % of AgWest regional economy | **3.9** | **4.2** | **2.6** |

## Measuring the Amount of Related Economic Activity

Table 8 estimates the total economic contributions of the natural resources by combining the direct effects (activity within the sector) with related economic activity including indirect effects (purchases made by natural resource industries from other businesses) and induced effects (purchases made by households with income earned from the sector or related sectors). The value of this economic contribution is shown as a percentage of the entire economy within the seven-state region.

Table . Natural resources sectors' economic contributions by state (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Direct, Indirect**  **and Induced Effects by State** | **Full &**  **Part-time Jobs** | | **Sales**  **($000)** | | **Value-added**  **($000)** | |
| Alaska | 37,284 |  | 8,688,598 |  | 3,496,626 |  |
| Arizona | 129,379 |  | 27,057,334 |  | 11,754,009 |  |
| California | 1,306,122 |  | 311,115,233 |  | 153,396,487 |  |
| Idaho | 160,138 |  | 38,925,488 |  | 14,673,748 |  |
| Montana | 71,483 |  | 11,679,624 |  | 4,565,906 |  |
| Oregon | 267,052 |  | 58,625,496 |  | 25,824,553 |  |
| Washington | 322,406 |  | 75,673,292 |  | 34,841,416 |  |
| **AgWest region’s natural resources\*** | **2,387,172** |  | **556,462,739** |  | **264,873,897** |  |
| Total AgWest region | 36,576,267 |  | 8,175,178,911 |  | 4,986,785,116 |  |
| Natural resource % of AgWest region | 6.5 |  | 6.8 |  | 5.3 |  |

\*AgWest natural resources numbers are different from the sum of the states because they include economic linkages among states.

Table 9 shows natural resources economic contributions by sector and includes the multipliers for each sector. Multipliers demonstrate how the direct effects of a given sector impacts related effects in the economy.

The amount of economic activity linked to a given sector depends on the initial size of the sector and the degree of labor intensity behind the production. The larger the initial size of the sector, the larger the spillover benefits, because more businesses are buying and selling, and more people are earning wages and income. This results in a higher economic multiplier.

The amount of economic activity is also influenced by the completeness of the economy. Completeness of the economy is based on how many goods and services an economy can provide for itself versus needing to import. A more complete economy will import less of its needs than a specialized economy with a narrower variety of industries. This means the more complete an economy is, the more the economy can purchase goods and services from within itself. This results in a higher economic multiplier.

The natural resources sectors of the seven-state region have an average sales multiplier of 1.64. This indicates that for every $1.00 of natural resources output, $0.64 of additional sales are generated in supporting industries, and/or by purchases made by owners and workers within supporting sectors. The forestry and wood products sector has the highest sales multiplier among the three at 1.68.

The average regional employment multiplier for the sectors is 1.68. For every job in the natural resource sector, another 0.68 jobs are generated. Forestry and wood products has the highest multiplier among the sectors at 2.04, meaning that for every job created in the industry an additional 1.04 ‘spinoff’ jobs are created.

The value-added multiplier is similar among the sectors and is 2.02 overall. For every dollar increase in the net output of the natural resources, another $1.02 dollars of net output in other sectors is created.

Table . AgWest Seven-State Region natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect**  **and Induced Effects** **by** **Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 766,002 | 141,507,182 | 78,824,064 |
| Support activities for agriculture | 373,748 | 30,696,416 | 24,380,317 |
| Food mfg. except soft drinks, water, and seafood | 863,800 | 281,749,879 | 111,835,418 |
| **Subtotal** | **2,003,550** | **453,953,477** | **215,039,800** |
| % of total AgWest Region economy | 5.5 | 5.6 | 4.3 |
| Multiplier | 1.65 | 1.63 | 2.02 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 35,584 | 5,430,873 | 3,680,899 |
| Support activities for forestry | 19,008 | 1,180,579 | 1,320,425 |
| Wood products manufacturing | 256,004 | 79,984,524 | 37,792,961 |
| **Subtotal** | **310,596** | **86,596,976** | **42,794,284** |
| % of total AgWest Region economy | 0.8 | 1.1 | 0.9 |
| Multiplier | 2.04 | 1.68 | 2.05 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 39,717 | 4,337,054 | 2,990,741 |
| Seafood manufacturing | 33,309 | 11,576,232 | 4,049,072 |
| **Subtotal** | **73,026** | **15,913,286** | **7,039,813** |
| % of total AgWest Region economy | 0.2 | 0.2 | 0.1 |
| Multiplier | 1.53 | 1.55 | 1.98 |
| **Total natural resources** | **2,387,172** | **556,462,739** | **264,873,897** |
| Total AgWest Seven-State Region economy | 36,576,267 | 8,175,178,911 | 4,986,785,116 |
| Natural resources % of AgWest Region economy | 6.5 | 6.8 | 5.3 |
| Multiplier | 1.68 | 1.64 | 2.02 |

## Focusing on the Size of Exports as One Destination for Natural Resource Production

The natural resource sector is dependent on exports to bolster markets. Table 10 summarizes exports of the natural resources sector to other states in the U.S. and other countries. Natural resource exports were worth an estimated $147.7 billion and represented 7.3 percent of all exports from the region.

Notably, Alaska exports 86 percent of the state’s natural resource production, but that only represents 15 percent of Alaska’s overall exports. Idaho exports 72 percent of its natural resource production, and that accounts for almost one-third of the state’s total exports.

Caution should be used in interpreting this data. Exports are a portion of total sales and should not be added to the values from any other table. In the regional model, sales among the seven states are not considered exports. Therefore, total exports and activity supporting exports are smaller in the seven-state region than the sum of all seven states.

Table . Value of natural resources exports (domestic and international) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects by State** | **Natural Resource Export Sales ($000)** | **% of Total Natural Resource Production** | **% of Total Exports** |
| Alaska | 5,436,692 | 86 | 14.5 |
| Arizona | 10,250,271 | 61 | 5.4 |
| California | 95,528,742 | 49 | 6.2 |
| Idaho | 18,836,892 | 72 | 29.8 |
| Montana | 5,391,672 | 73 | 15.2 |
| Oregon | 27,465,372 | 71 | 20.3 |
| Washington | 30,836,269 | 63 | 8.3 |
| **AgWest Region\*** | **147,709,151** | **43** | **7.3** |

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

Table 11 provides export details for the seven-state region by sector. As noted above, exports are a portion of total sales and should not be added to the values from any other table. However, it is useful to compare the exported portion of sales to total sales. (Refer to Table 7 for total sales by sector.)

Substantial portions of total sales within the natural resources sector, 43.4 percent, are exported. By comparison, 27.7 percent of all goods and services produced in the seven-state region are exported. By sector, the portion of sales exported is 45.7 percent for agriculture and food manufacturing, 27.7 percent for forestry and wood products, and 59.1 percent for fishing and seafood manufacturing.

Table . Exports, both domestic and international, for AgWest seven-state region for natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Direct Effects by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of Total Sector Sales** |
| **Agriculture and food manufacturing** |  |  |  |  |
| Agricultural farmgate production | 31,799,464 | 11,679,846 | 43,479,310 | 53.1 |
| Support activities for agriculture | 9,497,900 | 18,616 | 9,516,515 | 59.3 |
| Food mfg. except soft drinks, water, and seafood | 64,860,118 | 9,543,384 | 74,403,502 | 41.2 |
| **Subtotal** | **106,157,482** | **21,241,845** | **127,399,327** | **45.7** |
| % of total AgWest Region exports | 6.8 | 4.5 | 6.3 |  |
| **Forestry and wood products** |  |  |  |  |
| Forest products growth and harvest | 936,683 | 377,784 | 1,314,466 | 41.8 |
| Support activities for forestry | 287,101 | 602 | 287,703 | 46.6 |
| Wood products manufacturing | 9,975,960 | 2,646,484 | 12,622,444 | 26.5 |
| **Subtotal** | **11,199,743** | **3,024,870** | **14,224,613** | **27.7** |
| % of total AgWest Region exports | 0.7 | 0.6 | 0.7 |  |
| **Fishing and seafood manufacturing** |  |  |  |  |
| Commercial fishing | 267,789 | 1,014,738 | 1,282,527 | 52.7 |
| Seafood manufacturing | 4,573,229 | 229,454 | 4,802,683 | 61.1 |
| **Subtotal** | **4,841,018** | **1,244,193** | **6,085,211** | **59.1** |
| % of total AgWest Region exports | 0.3 | 0.3 | 0.3 |  |
| **Total natural resources** | **122,198,243** | **25,510,908** | **147,709,151** | **43.4** |
| Total AgWest Seven State Region | 1,559,969,545 | 472,496,116 | 2,032,465,661 | 24.9 |
| Natural resources as a % of AgWest Region exports | 7.8 | 5.4 | 7.3 |  |

\* Include domestic exports, Federal Government demand, and inventory exported

## Natural Resources Exports as a Portion of Total Economic Contributions

Table 12 provides additional details about the total effects of natural resource exports in the regional economy. The data estimates how much total economic activity is linked to the sale of exported natural resource production and processing. These economic contribution values are a portion of the total economic contribution and should not be added to the values from any other table.

An estimated $301.0 billion in sales occur either directly through the natural resources or supporting industries. This represents 3.7 percent of regional output. A total of 1.4 million jobs are directly or indirectly related to the export activity in the natural resources sector, representing 3.9 percent of regional jobs.

These same values are provided by state. In the regional model, when Alaska, Arizona, California, Idaho, Montana, Oregon, and Washington export among themselves, these sales are not considered exports; therefore, total exports and activity supporting exports are smaller in the seven-state region than the sum of all seven states.

Table . Economic contribution of the natural resources sectors' exports in 2021 dollars

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects by State** | **Export Full &  Part-time Jobs** | | **Export Sales  ($000)** | | **Exports Value-added ($000)** | |
| Alaska | 34,877 |  | 8,276,865 |  | 3,341,225 |  |
| Arizona | 89,230 |  | 18,786,293 |  | 8,110,131 |  |
| California | 844,038 |  | 181,310,268 |  | 94,097,655 |  |
| Idaho | 144,535 |  | 35,120,085 |  | 13,230,579 |  |
| Montana | 63,167 |  | 10,321,263 |  | 4,040,725 |  |
| Oregon | 224,103 |  | 49,227,683 |  | 21,730,331 |  |
| Washington | 245,778 |  | 56,618,736 |  | 26,241,847 |  |
| **AgWest natural resources\*** | **1,429,239** |  | **300,978,789** |  | **149,547,941** |  |
| Total AgWest Region | 36,576,267 |  | 8,175,178,911 |  | 4,986,785,116 |  |
| Natural resource % of AgWest Region | 3.9 |  | 3.7 |  | 3.0 |  |

\*Total regional numbers are larger than the sum of the states because they include economic linkages among states.

Table 13 provides export information for the seven-state region with detail by sector. Natural resource exports account for 3.9 percent of jobs, 3.7 percent of total sales and 3.0 percent of value-added sales in the region driven by the agriculture and food processing sector. The sector alone accounts for 3.5 percent of jobs, 3.2 percent of total sales and 2.6 percent of value-added sales. In each of the sectors below, processing and manufacturing activity supports the largest number of jobs, sales and value-added activity. While exports in general are highly effective at bringing “new money” into a region, the economic effects of exports increase as the finished level of good or service is increased. For example, exporting flour has a greater economic impact than exporting wheat. Exporting roof trusses has a greater impact than logs.

Table . AgWest Seven-State Region Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 511,867 | 89,036,907 | 50,394,633 |
| Support activities for agriculture | 224,268 | 18,728,919 | 14,741,347 |
| Food mfg. except soft drinks, water, and seafood | 528,064 | 153,346,273 | 64,685,217 |
| **Subtotal** | **1,264,199** | **261,112,099** | **129,821,198** |
| % of total AgWest Region exports | 3.5 | 3.2 | 2.6 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 19,244 | 2,768,402 | 1,887,263 |
| Support activities for forestry | 8,966 | 566,213 | 627,583 |
| Wood products manufacturing | 85,861 | 25,671,594 | 12,311,985 |
| **Subtotal** | **114,071** | **29,006,209** | **14,826,831** |
| % of total AgWest Region exports | 0.31 | 0.35 | 0.30 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 21,103 | 2,332,214 | 1,597,305 |
| Seafood manufacturing | 29,867 | 8,528,267 | 3,302,607 |
| **Subtotal** | **50,969** | **10,860,481** | **4,899,912** |
| % of total AgWest Region exports | 0.14 | 0.13 | 0.10 |
| **Total natural resources exports** | **1,429,239** | **300,978,789** | **149,547,941** |
| Total AgWest Seven State Region exports | 36,576,267 | 8,175,178,911 | 4,986,785,116 |
| Natural resources as a % of AgWest Region exports | 3.9 | 3.7 | 3.0 |

## Alaska

Alaska’s natural resource industries directly contribute 5.9 percent of jobs, 6.8 percent of sales, and 3.4 percent to the state’s overall economy driven by the fishing and seafood manufacturing sector.

* The agriculture and food manufacturing sector is a minor contributor to Alaska’s economy. Direct effects account for 3,757 jobs (0.9% of Alaska’s jobs), $649.6 million in sales (0.7% of Alaska’s sales), and $166.6 million of Gross State Product (0.3 % of Alaska’s GSP).
* Forestry and wood products directly account for 962 jobs (0.2% of Alaska’s jobs), $154 million in sales (0.2% of Alaska’s sales), and $47 million of Gross State Product (0.1% of Alaska’s GSP).
* Commercial fishing and seafood manufacturing is a notable contributor to Alaska’s economy and directly accounts for 21,119 jobs (4.84% of Alaska’s jobs), $5.5 billion in sales (5.93% of Alaska’s sales), and $1.7 billion of Gross State Product (3.01% of Alaska’s GSP).

It’s interesting to note that support activities for agriculture and forestry were a drain on Alaska’s economy in 2021. Based on analysis of the underlying data, costs exceeded revenues in these industries.

Table . Alaska natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food manufacturing** |  |  |  |
| Agricultural farmgate production | 1,413 | 81,958 | 31,267 |
| Support activities for agriculture | 309 | 3,643 | -14,253 |
| Food mfg. except soft drinks, water, and seafood | 2,035 | 564,057 | 149,591 |
| **Subtotal** | **3,757** | **649,659** | **166,605** |
| Agriculture and food mfg. % of Alaska | 0.9 | 0.7 | 0.3 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 476 | 38,186 | 21,408 |
| Support activities for forestry | 104 | 1,698 | -9,759 |
| Wood products manufacturing | 382 | 113,647 | 35,132 |
| **Subtotal** | **962** | **153,531** | **46,781** |
| Forestry and wood products % of Alaska | 0.2 | 0.2 | 0.1 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 12,568 | 1,545,922 | 933,660 |
| Seafood manufacturing | 8,550 | 3,937,442 | 798,092 |
| **Subtotal** | **21,119** | **5,483,364** | **1,731,752** |
| Total fishing and seafood mfg. % of Alaska | 4.84 | 5.93 | 3.01 |
| **Total natural resources** | **25,838** | **6,286,553** | **1,945,138** |
| Total Alaska | 436,781 | 92,509,262 | 57,609,358 |
| Natural resource % of Alaska | 5.9 | 6.8 | 3.4 |

The total effects of Alaska’s natural resource industries contribute 8.5 percent of jobs, 9.4 percent of sales, and 6.1 percent to the state’s overall economy.

* The job multiplier of 1.44 indicates that for every job within the natural resources, another 0.44 jobs are created in supporting industries.
* The sales multiplier of 1.38 indicates that for every $1.00 in sales generated by the natural resources, $0.38 in sales is generated in supporting industries.
* The value-added multiplier of 1.80 indicates that for every $1.00 of value-added activity generated by the natural resources an additional $0.80 of value-added activity is generated in the state’s economy.

Table . Alaska natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 1,752 | 152,979 | 77,141 |
| Support activities for agriculture | 421 | 25,118 | -2,184 |
| Food mfg. except soft drinks, water, and seafood | 3,228 | 814,396 | 311,287 |
| **Subtotal** | **5,401** | **992,494** | **386,245** |
| % of total Alaska economy | 1.2 | 1.1 | 0.7 |
| Multiplier | 1.44 | 1.53 | 2.32 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 620 | 68,502 | 40,989 |
| Support activities for forestry | 142 | 11,703 | -1,495 |
| Wood products manufacturing | 586 | 156,483 | 62,799 |
| **Subtotal** | **1,349** | **236,687** | **102,293** |
| % of total Alaska economy | 0.3 | 0.3 | 0.2 |
| Multiplier | 1.40 | 1.54 | 2.19 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 16,144 | 2,296,375 | 1,418,369 |
| Seafood manufacturing | 14,390 | 5,163,042 | 1,589,719 |
| **Subtotal** | **30,535** | **7,459,417** | **3,008,088** |
| % of total Alaska economy | 7.0 | 8.1 | 5.2 |
| Multiplier | 1.45 | 1.36 | 1.74 |
| **Total natural resources** | **37,285** | **8,688,598** | **3,496,626** |
| Total Alaska | 436,781 | 92,509,262 | 57,609,358 |
| Natural resource % of Alaska | 8.5 | 9.4 | 6.1 |
| Multiplier | 1.44 | 1.38 | 1.80 |

Alaska’s natural resource industries represent 14.5 percent of the state’s overall exports. The natural resources industries are highly export dependent. Exports represent 86.5 percent of the natural resource sectors’ sales.

* Agriculture and food manufacturing accounts for 1.2 percent of Alaska’s total exports and 68.6 percent of sector sales.
* Forestry and wood product production exports account for 0.2 percent of Alaska’s total exports, and 56.7 percent of sector sales.
* Fishing and seafood manufacturing exports account for 13.1 percent of Alaska’s total exports, and 89.4 percent of sector sales.

Table . Exports both domestic and international for Alaska natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of total sector sales** |
| **Agriculture and food manufacturing** |  |  |  |  |
| Agricultural farmgate production | 8,893 | 5,412 | 14,305 | 17.5 |
| Support activities for agriculture | 202 | 3 | 205 | 5.6 |
| Food mfg. except soft drinks, water, and seafood | 402,051 | 29,337 | 431,388 | 76.5 |
| **Subtotal** | **411,146** | **34,752** | **445,897** | **68.6** |
| % of total Alaska exports | 1.1 | 0.1 | 1.2 |  |
| **Forestry and wood products** |  |  |  |  |
| Forest products growth and harvest | 15,776 | 4,889 | 20,665 | 54.1 |
| Support activities for forestry | 293 | 3 | 296 | 17.4 |
| Wood products manufacturing | 57,903 | 8,262 | 66,164 | 58.2 |
| **Subtotal** | **73,972** | **13,153** | **87,125** | **56.7** |
| % of total Alaska exports | 0.2 | 0.0 | 0.2 |  |
| **Fishing and seafood manufacturing** |  |  |  |  |
| Commercial fishing | 515,806 | 644,701 | 1,160,506 | 75.1 |
| Seafood manufacturing | 3,628,369 | 114,795 | 3,743,163 | 95.1 |
| **Subtotal** | **4,144,174** | **759,495** | **4,903,670** | **89.4** |
| % of total Alaska exports | 11.1 | 2.0 | 13.1 |  |
| **Total natural resources exports** | **4,629,292** | **807,400** | **5,436,692** | **86.5** |
| Total AgWest Seven State Region exports | 31,489,666 | 5,913,481 | 37,403,147 | 40.4 |
| Natural resources as a % of Alaska exports | 12.4 | 2.2 | 14.5 |  |

\*Include domestic exports, Federal Government demand, and inventory exported

Considering the total effects generated by natural resource exports on the state economy:

* $445.9 million in direct agriculture and food processing export sales created;
  + 3,080 Alaska jobs, or 0.7 percent jobs in the state.
  + $681.5 million in sales, or 0.7 percent of Alaska’s total economic output.
  + $264.5 million in value-added, or 0.5 percent of Alaska’s gross state product (GSP).
* $87.1 million in direct forestry and wood product exports sales created;
  + 940 Alaska jobs, or 0.2 percent jobs in the state.
  + $154.4 million in sales, or 0.2 percent of Alaska’s total economic output.
  + $69.6 million in value-added, or 0.1 percent of Alaska’s GSP.
* $4.9 billion in direct fishing and seafood manufacturing export sales created;
  + 30,857 Alaska jobs, or 7.1 percent jobs in the state
  + $7.4 billion in sales, or 8.0 percent of Alaska’s total economic output
  + $3.0 billion in value-added, or 5.22 percent of Alaska’s GSP.

Table . Alaska Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 329 | 28,451 | 13,633 |
| Support activities for agriculture | 26 | 1,450 | -97 |
| Food mfg. except soft drinks, water, and seafood | 2,725 | 651,550 | 250,938 |
| **Subtotal** | **3,080** | **681,451** | **264,475** |
| % of total Alaska economy | 0.7 | 0.7 | 0.5 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 434 | 45,725 | 25,063 |
| Support activities for forestry | 27 | 2,095 | -205 |
| Wood products manufacturing | 479 | 106,633 | 44,780 |
| **Subtotal** | **940** | **154,453** | **69,637** |
| % of total Alaska economy | 0.2 | 0.2 | 0.1 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 12,139 | 1,727,660 | 1,066,302 |
| Seafood manufacturing | 18,718 | 5,713,301 | 1,940,811 |
| **Subtotal** | **30,857** | **7,440,961** | **3,007,113** |
| % of total Alaska economy | 7.06 | 8.04 | 5.22 |
| **Total natural resources** | **34,877** | **8,276,865** | **3,341,225** |
| Total Alaska | 436,781 | 92,509,262 | 57,609,358 |
| % of total Alaska economy | 8.0 | 8.9 | 5.8 |

## Arizona

Arizona’s natural resource industries contribute 1.9 percent of jobs, 2.2 percent of sales, and 1.4 percent of the state’s overall economic activity (GSP) driven by the agriculture and food manufacturing sector.

* In the agriculture and food manufacturing sector, direct effects account for 67,879 jobs (1.7% of Arizona jobs), $14.5 billion in sales (1.9% of state sales), and $5.2 billion of Gross State Product (1.2 % of Arizona’s GSP).
* Forestry and wood products directly account for 6,961 jobs (0.2% of Arizona jobs), $2.3 billion in sales (0.3% of Alaska’s sales), and $694.9 million of Gross State Product (0.2% of Arizona’s GSP).
* Commercial fishing and seafood manufacturing directly account for 562 jobs (0.01% of Arizona jobs), $35.0 million in sales (0.00% of state sales), and $11.4 million of Gross State Product (0.00% of Arizona’s GSP).

Table . Arizona natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food manufacturing** |  |  |  |
| Agricultural farmgate production | 30,546 | 4,138,044 | 2,182,015 |
| Support activities for agriculture | 12,225 | 589,416 | 571,310 |
| Food mfg. except soft drinks, water, and seafood | 25,108 | 9,732,168 | 2,451,212 |
| **Subtotal** | **67,879** | **14,459,628** | **5,204,537** |
| Agriculture and food mfg. % of Arizona | 1.7 | 1.9 | 1.2 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 799 | 82,376 | 57,641 |
| Support activities for forestry | 320 | 11,733 | 15,092 |
| Wood products manufacturing | 5,842 | 2,223,000 | 622,166 |
| **Subtotal** | **6,961** | **2,317,110** | **694,899** |
| Forestry and wood products % of Arizona | 0.2 | 0.3 | 0.2 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 498 | 6,281 | 6,210 |
| Seafood manufacturing | 64 | 28,732 | 5,177 |
| **Subtotal** | **562** | **35,012** | **11,387** |
| Total fishing and seafood mfg. % of Arizona | 0.01 | 0.00 | 0.00 |
| **Total natural resources** | **75,402** | **16,811,750** | **5,910,823** |
| Total Arizona | 3,943,087 | 750,943,771 | 424,529,533 |
| Natural resource % of Arizona | 1.9 | 2.2 | 1.4 |

The total effects of Arizona’s natural resource industries contribute 3.3 percent of jobs, 3.6 percent of sales, and 2.8 percent to the state’s overall economy.

* The job multiplier of 1.72 indicates that for every job within the natural resources, another 0.72 jobs are created in supporting industries.
* The sales multiplier of 1.61 indicates that for every $1.00 in sales generated by the natural resources, $0.61 in sales is generated in supporting industries.
* The value-added multiplier of 1.99 indicates that for every $1 of value-added activity generated by the natural resources an additional $0.99 of value-added activity is generated in the state’s economy.

Table . Arizona natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 46,600 | 7,185,428 | 3,920,018 |
| Support activities for agriculture | 15,012 | 1,121,580 | 872,893 |
| Food mfg. except soft drinks, water, and seafood | 51,165 | 14,678,117 | 5,272,042 |
| **Subtotal** | **112,776** | **22,985,125** | **10,064,952** |
| % of total Arizona economy | 2.9 | 3.1 | 2.4 |
| Multiplier | 1.66 | 1.59 | 1.93 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 1,082 | 136,081 | 88,270 |
| Support activities for forestry | 393 | 22,327 | 23,059 |
| Wood products manufacturing | 14,493 | 3,865,004 | 1,558,480 |
| **Subtotal** | **15,967** | **4,023,413** | **1,669,809** |
| % of total Arizona economy | 0.4 | 0.5 | 0.4 |
| Multiplier | 2.29 | 1.74 | 2.40 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 506 | 7,809 | 7,081 |
| Seafood manufacturing | 129 | 40,987 | 12,167 |
| **Subtotal** | **635** | **48,796** | **19,248** |
| % of total Arizona economy | 0.0 | 0.0 | 0.0 |
| Multiplier | 1.13 | 1.39 | 1.69 |
| **Total natural resources** | **129,378** | **27,057,334** | **11,754,009** |
| Total Arizona | 3,943,087 | 750,943,771 | 424,529,533 |
| Natural resource % of Arizona | 3.3 | 3.6 | 2.8 |
| Multiplier | 1.72 | 1.61 | 1.99 |

Arizona’s natural resource industries represent 5.4 percent of the state’s overall exports. The natural resources industries are highly export dependent. Exports represent 61.0 percent of the natural resource sectors’ sales.

* Agriculture and food manufacturing accounts for 4.8 percent of Arizona’s total exports and 62.2 percent of sector sales.
* Forestry and wood product production exports account for 0.7 percent of Arizona’s total exports, and 53.2 percent of sector sales.
* Fishing and seafood manufacturing exports account for 0.00 percent of Arizona’s total exports, and 70.1 percent of sector sales.

Table . Exports both domestic and international for Arizona natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of total sector sales** |
| **Agriculture and food manufacturing** |  |  |  |  |
| Agricultural farmgate production | 1,305,671 | 414,672 | 1,720,343 | 41.6 |
| Support activities for agriculture | 293,398 | 681 | 294,079 | 49.9 |
| Food mfg. except soft drinks, water, and seafood | 6,456,562 | 522,151 | 6,978,713 | 71.7 |
| **Subtotal** | **8,055,630** | **937,504** | **8,993,134** | **62.2** |
| % of total Arizona exports | 4.3 | 0.5 | 4.8 |  |
| **Forestry and wood products** |  |  |  |  |
| Forest products growth and harvest | 52.913 | 7,645 | 60,558 | 73.5 |
| Support activities for forestry | 10,399 | 13 | 10,352 | 88.2 |
| Wood products manufacturing | 1,037,823 | 123,856 | 1,161,679 | 52.3 |
| **Subtotal** | **1,101,076** | **131,514** | **1,232,589** | **53.2** |
| % of total Arizona exports | 0.6 | 0.1 | 0.7 |  |
| **Fishing and seafood manufacturing** |  |  |  |  |
| Commercial fishing | 134 | 2,619 | 2,754 | 43.8 |
| Seafood manufacturing | 20,956 | 839 | 21,794 | 75.9 |
| **Subtotal** | **21,090** | **3,458** | **24,548** | **70.1** |
| % of total Arizona exports | 0.0 | 0.0 | 0.0 |  |
| **Total natural resources exports** | **9,177,796** | **1,072,476** | **10,250,271** | **61.0** |
| Total AgWest Seven-State Region exports | 150,661,260 | 38,316,131 | 188,977,391 | 25.2 |
| Natural resources as a % of Arizona exports | 4.9 | 0.6 | 5.4 |  |

\*Includes domestic exports, Federal Government demand, and inventory exported

Considering the total effects generated by natural resource exports on the state economy:

* $9.0 billion in direct agriculture and food processing export sales created;
  + 79,458 Arizona jobs, or 2.0 percent jobs in the state.
  + $16.5 billion in sales, or 2.2 percent of Arizona’s total economic output
  + $7.1 billion in value-added, or 1.7 percent of Arizona’s gross state product (GSP).
* $1.2 billion in direct forestry and wood product exports sales created;
  + 9,434 Arizona jobs, or 0.2 percent jobs in the state.
  + $2.3 billion in sales, or 0.3 percent of Arizona’s total economic output.
  + $964.0 million in value-added, or 0.2 percent of Arizona’s gross state product (GSP).
* $24.5 million in direct fishing and seafood manufacturing export sales created;
  + 337 Arizona jobs, or 0.01 percent jobs in the state.
  + $36.0 million in sales, or 0.005 percent of Arizona’s total economic output
  + $13.1 million in value-added, or 0.003 percent of Arizona’s gross state product (GSP)

Table . Arizona Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 22,424 | 3,315,373 | 1,836,516 |
| Support activities for agriculture | 7,484 | 565,328 | 436,018 |
| Food mfg. except soft drinks, water, and seafood | 49,550 | 12,592,075 | 4,860,409 |
| **Subtotal** | **79,458** | **16,472,775** | **7,132,943** |
| % of total Arizona economy | 2.0 | 2.2 | 1.7 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 1,019 | 119,808 | 79,033 |
| Support activities for forestry | 346 | 19,900 | 20,367 |
| Wood products manufacturing | 8,069 | 2,137,855 | 864,643 |
| **Subtotal** | **9,434** | **2,277,564** | **964,043** |
| % of total Arizona economy | 0.2 | 0.3 | 0.2 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 222 | 3,436 | 3,110 |
| Seafood manufacturing | 116 | 32,518 | 10,035 |
| **Subtotal** | **337** | **35,955** | **13,145** |
| % of total Arizona economy | 0.01 | 0.005 | 0.003 |
| **Total natural resources** | **89,230** | **18,786,293** | **8,110,131** |
| Total Arizona | 3,943,087 | 750,943,771 | 424,529,533 |
| % of total Arizona economy | 2.3 | 2.5 | 1.9 |

## California

California’s natural resource industries directly contribute 3.5 percent of jobs, 3.6 percent of sales, and 2.4 percent to the state’s overall economy driven by the agriculture and food manufacturing sector.

* The agriculture and food manufacturing sector directly accounts for 743,520 jobs (3.2% of California’s jobs), $175.0 billion in sales (3.2% of state sales), and $72.8 billion of Gross State Product (2.1% of California’s GSP).
* Forestry and wood products directly accounts for 60,054 jobs (0.30% of California’s jobs), $20.3 billion in sales (0.40% of state sales), and $7.7 billion of Gross State Product (0.20% of California’s GSP).
* Commercial fishing and seafood manufacturing directly accounts for 6,896 (0.03% of California’s jobs), $897.8 million in sales (0.02% of state sales), and $357.4 million of Gross State Product (0.01% of California’s GSP).

Table . California natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food manufacturing** |  |  |  |
| Agricultural farmgate production | 245,341 | 48,436,947 | 27,737,310 |
| Support activities for agriculture | 236,067 | 12,716,222 | 12,386,914 |
| Food mfg. except soft drinks, water, and seafood | 262,112 | 113,714,328 | 32,655,686 |
| **Subtotal** | **743,520** | **174,867,497** | **72,779,910** |
| Agriculture and food mfg. % of California | 3.2 | 3.2 | 2.1 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 6,918 | 928,141 | 696,247 |
| Support activities for forestry | 6,656 | 243,666 | 310,929 |
| Wood products manufacturing | 46,480 | 19,203,670 | 6,643,522 |
| **Subtotal** | **60,054** | **20,375,476** | **7,650,698** |
| Forestry and wood products % of California | 0.3 | 0.4 | 0.2 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 5,430 | 187,287 | 185,161 |
| Seafood manufacturing | 1,466 | 710,559 | 172,272 |
| **Subtotal** | **6,896** | **897,846** | **357,433** |
| Total fishing and seafood mfg. % of California | 0.03 | 0.02 | 0.01 |
| **Total natural resources** | **810,470** | **196,140,820** | **80,788,040** |
| Total California | 23,464,019 | 5,450,023,021 | 3,397,333,787 |
| Natural resource % of California | 3.5 | 3.6 | 2.4 |

The total effects of California’s natural resource industries contribute 5.6 percent of jobs, 5.7 percent of sales, and 4.5 percent to the state’s overall economy.

* The job multiplier of 1.61 indicates that for every job within the natural resources, another 0.61 jobs are created in supporting industries.
* The sales multiplier of 1.59indicates that for every $1.00 in sales generated by the natural resources, $0.59 in sales is generated in supporting industries.
* The value-added multiplier of 1.90 indicates that for every $1 of value-added activity generated by the natural resources an additional $0.90 of value-added activity is generated in the state’s economy.

Table . California natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 372,875 | 78,020,544 | 46,419,518 |
| Support activities for agriculture | 280,995 | 23,231,425 | 18,988,866 |
| Food mfg. except soft drinks, water, and seafood | 524,838 | 174,695,520 | 71,147,368 |
| **Subtotal** | **1,178,709** | **275,911,489** | **136,555,751** |
| % of total California economy | 5.0 | 5.1 | 4.0 |
| Multiplier | 1.59 | 1.58 | 1.88 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 9,549 | 1,538,609 | 1,081,773 |
| Support activities for forestry | 7,923 | 445,157 | 476,648 |
| Wood products manufacturing | 101,309 | 31,919,615 | 14,670,667 |
| **Subtotal** | **118,781** | **33,903,381** | **16,229,089** |
| % of total California economy | 0.5 | 0.6 | 0.5 |
| Multiplier | 1.98 | 1.66 | 2.12 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 5,818 | 277,380 | 242,054 |
| Seafood manufacturing | 2,813 | 1,022,983 | 369,593 |
| **Subtotal** | **8,631** | **1,300,363** | **611,647** |
| % of total California economy | 0.04 | 0.02 | 0.02 |
| Multiplier | 1.25 | 1.45 | 1.71 |
| **Total natural resources** | **1,306,122** | **311,115,233** | **153,396,487** |
| Total California | 23,464,019 | 5,450,023,021 | 3,397,333,787 |
| Natural resource % of California | 5.6 | 5.7 | 4.5 |
| Multiplier | 1.61 | 1.59 | 1.90 |

California’s natural resource industries represent 6.2 percent of the state’s overall exports. Exports represent 48.7 percent of the state’s natural resource sectors’ sales.

* Agriculture and food manufacturing accounts for 5.8 percent of California’s total exports and 51.6 percent of sector sales.
* Forestry and wood product production exports account for 0.30 percent of California’s total exports, and 24.4 percent of sector sales.
* Fishing and seafood manufacturing exports account for 0.02 percent of California’s total exports, and 41.3 percent of sector sales.

Table . Exports both domestic and international for California natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of total sector sales** | |
| **Agriculture and food manufacturing** |  |  |  |  | |
| Agricultural farmgate production | 20,166,337 | 8,656,028 | 28,822,365 | 59.5 | |
| Support activities for agriculture | 8,708,619 | 14,772 | 8,723,391 | 68.6 | |
| Food mfg. except soft drinks, water, and seafood | 46,705,271 | 5,930,253 | 52,635,524 | 46.3 | |
| **Subtotal** | **75,580,226** | **14,601,054** | **90,181,280** | **51.6** | |
| % of total California exports | 4.9 | 0.9 | 5.8 |  | |
| **Forestry and wood products** |  |  |  |  | |
| Forest products growth and harvest | 370,420 | 107,374 | 477,794 | 51.5 | |
| Support activities for forestry | 144,426 | 183 | 144,609 | 59.3 | |
| Wood products manufacturing | 3,511,096 | 843,154 | 4,354,250 | 22.7 | |
| **Subtotal** | **4,025,942** | **950,711** | **4,976,653** | **24.4** | |
| % of total California exports | 0.3 | 0.1 | 0.3 |  | |
| **Fishing and seafood manufacturing** |  |  |  |  | |
| Commercial fishing | 862 | 78,105 | 78,967 | 42.2 | |
| Seafood manufacturing | 271,124 | 20,718 | 291,842 | 41.1 | |
| **Subtotal** | **271,986** | **98,823** | **370,809** | **41.3** | |
| % of total California exports | 0.02 | 0.01 | 0.02 |  | |
| **Total natural resources exports** | **79,878,154** | **15,650,588** | **95,528,742** | **48.7** | |
| Total AgWest Seven State Region exports | 1,235,489,128 | 317,509,013 | 1,552,998,140 | | 28.5 |
| Natural resources as a % of California exports | 5.1 | 1.0 | 6.2 |  | |

\*Includes domestic exports, Federal Government demand, and inventory exported

Considering the total effects generated by natural resource exports on the state economy:

* $90.2 billion in direct agriculture and food processing export sales created;
  + 802,396 California jobs, or 3.4 percent of jobs in the state.
  + $171.2 billion in sales, or 3.1 percent of California’s total economic output
  + $89.0 billion in value-added, or 2.6 percent of California’s gross state product (GSP).
* $5.0 billion in direct forestry and wood product exports sales created;
  + 937,738 California jobs, or 0.2 percent of jobs in the state.
  + $9.5 billion in sales, or 0.2 percent of California’s total economic output.
  + $4.8 billion in value-added, or 0.1 percent of California’s gross state product (GSP).
* $370.8 million in direct fishing and seafood manufacturing export sales created;
  + 3,903 California jobs, or 0.02 percent of jobs in the state.
  + $571.7 million in sales, or 0.01 percent of California’s total economic output
  + $275.0 million in value-added, or 0.01 percent of California’s gross state product (GSP)

Table . California Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 279,011 | 53,647,310 | 32,337,796 |
| Support activities for agriculture | 194,189 | 16,276,678 | 13,191,514 |
| Food mfg. except soft drinks, water, and seafood | 329,196 | 101,315,953 | 43,502,076 |
| **Subtotal** | **802,396** | **171,239,941** | **89,031,386** |
| % of total California economy | 3.4 | 3.1 | 2.6 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 6,239 | 939,312 | 664,815 |
| Support activities for forestry | 4,737 | 269,822 | 286,462 |
| Wood products manufacturing | 26,762 | 8,289,462 | 3,6840,106 |
| **Subtotal** | **37,738** | **9,498,596** | **4,791,384** |
| % of total California economy | 0.2 | 0.2 | 0.1 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 2,459 | 118,597 | 102,803 |
| Seafood manufacturing | 1,444 | 453,134 | 172,083 |
| **Subtotal** | **3,903** | **571,731** | **274,886** |
| % of total California economy | 0.02 | 0.01 | 0.01 |
| **Total natural resources** | **844,038** | **181,310,268** | **94,097,655** |
| Total California | 23,464,019 | 5,450,023,021 | 3,397,333,787 |
| % of total California economy | 3.6 | 3.3 | 2.8 |

## Idaho

Idaho’s natural resource industries directly contribute 7.7 percent of jobs, 13.4 percent of sales, and 8.1 percent to the state’s overall economy driven by the agriculture and food manufacturing sector.

* The agriculture and food manufacturing sector directly accounts for 72,854 jobs (6.6% of Idaho’s jobs), $22.8 billion in sales (11.7% of state sales), and $6.7 billion of Gross State Product (6.9% of Idaho’s GSP).
* Forestry and wood products directly accounts for 10,694 jobs (1.0% of Idaho’s jobs), $3.2 billion in sales (1.7% of state sales), and $1.1 billion of Gross State Product (1.2% of Idaho’s GSP).
* Commercial fishing and seafood manufacturing directly accounts for 364 (0.03% of Idaho’s jobs), $72.1 million in sales (0.04% of state sales), and $19.2 million of Gross State Product (0.02% of Idaho’s GSP).

Table . Idaho natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food manufacturing** |  |  |  |
| Agricultural farmgate production | 40,654 | 8,858,173 | 3,021,331 |
| Support activities for agriculture | 9,635 | 445,440 | 422,277 |
| Food mfg. except soft drinks, water, and seafood | 22,565 | 13,534,360 | 3,299,512 |
| **Subtotal** | **72,854** | **22,837,973** | **6,743,121** |
| Agriculture and food mfg. % of Idaho | 6.6 | 11.7 | 6.9 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 2,268 | 244,561 | 164,427 |
| Support activities for forestry | 537 | 12,298 | 22,981 |
| Wood products manufacturing | 7,888 | 2,987,257 | 952,867 |
| **Subtotal** | **10,694** | **3,244,116** | **1,140,275** |
| Forestry and wood products % of Idaho | 1.0 | 1.7 | 1.2 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 221 | 9,913 | 9,801 |
| Seafood manufacturing | 144 | 62,197 | 9,410 |
| **Subtotal** | **364** | **72,110** | **19,211** |
| Total fishing and seafood mfg. % of Idaho | 0.03 | 0.04 | 0.02 |
| **Total natural resources** | **83,912** | **26,154,199** | **7,902,607** |
| Total Idaho | 1,095,899 | 195,712,152 | 97,768,091 |
| Natural resource % of Idaho | 7.7 | 13.4 | 8.1 |

The total effects of Idaho’s natural resource industries contribute 14.6 percent of jobs, 19.9 percent of sales, and 15.0 percent to the state’s overall economy.

* The job multiplier of 1.91 indicates that for every job within the natural resources, another 0.91 jobs are created in supporting industries.
* The sales multiplier of 1.49 indicates that for every $1.00 in sales generated by the natural resources, $0.49 in sales is generated in supporting industries.
* The value-added multiplier of 1.86 indicates that for every $1 of value-added activity generated by the natural resources an additional $0.86 of value-added activity is generated in the state’s economy.

Table . Idaho natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 74,716 | 14,565,180 | 6,047,114 |
| Support activities for agriculture | 11,434 | 754,995 | 582,225 |
| Food mfg. except soft drinks, water, and seafood | 51,801 | 18,432,752 | 5,896,586 |
| **Subtotal** | **137,951** | **33,752,926** | **12,525,925** |
| % of total Idaho economy | 12.6 | 17.2 | 12.8 |
| 1.89 | 1.89 | 1.48 | 1.86 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 3,049 | 375,454 | 233,825 |
| Support activities for forestry | 638 | 20,844 | 31,686 |
| Wood products manufacturing | 18,005 | 4,682,272 | 1,851,501 |
| **Subtotal** | **21,692** | **5,078,571** | **2,117,011** |
| % of total Idaho economy | 2.0 | 2.6 | 2.2 |
| Multiplier | 2.03 | 1.57 | 1.86 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 229 | 11,268 | 10,519 |
| Seafood manufacturing | 266 | 82,723 | 20,293 |
| **Subtotal** | **495** | **93,991** | **30,812** |
| % of total Idaho economy | 0.0 | 0.0 | 0.0 |
| Multiplier | 1.36 | 1.30 | 1.60 |
| **Total natural resources** | **160,138** | **38,925,488** | **14,673,748** |
| Total Idaho | 1,095,899 | 195,712,152 | 97,768,091 |
| Natural resource % of Idaho | 14.6 | 19.9 | 15.0 |
| Multiplier | 1.91 | 1.49 | 1.86 |

Idaho’s natural resource industries represent 29.8 percent of the state’s overall exports. The industries are highly export dependent. Exports represent 72.0 percent of the state’s natural resource sectors’ sales.

* Agriculture and food manufacturing accounts for 26.1 percent of Idaho’s total exports and 72.2 percent of sector sales.
* Forestry and wood product production exports account for 3.6 percent of Idaho’s total exports, and 70.4 percent of sector sales.
* Fishing and seafood manufacturing exports account for 0.01 percent of Idaho’s total exports, and 86.0 percent of sector sales.

Table . Exports both domestic and international for Idaho natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of total sector sales** |
| **Agriculture and food manufacturing** |  |  |  |  |
| Agricultural farmgate production | 4,851,815 | 530,369 | 5,382,185 | 60.8 |
| Support activities for agriculture | 13,935 | 502 | 14,437 | 3.2 |
| Food mfg. except soft drinks, water, and seafood | 10,456,392 | 638,916 | 11,095,308 | 82.0 |
| **Subtotal** | **15,322,142** | **1,169,787** | **16,491,929** | **72.2** |
| % of total Idaho exports | 24.2 | 1.9 | 26.1 |  |
| **Forestry and wood products** |  |  |  |  |
| Forest products growth and harvest | 107,524 | 27,631 | 135,154 | 55.3 |
| Support activities for forestry | 336 | 26 | 363 | 2.9 |
| Wood products manufacturing | 1,976,305 | 171,124 | 2,147,429 | 71.9 |
| **Subtotal** | **2,084,165** | **198,781** | **2,282,946** | **70.4** |
| % of total Idaho exports | 3.3 | 0.3 | 3.6 |  |
| **Fishing and seafood manufacturing** |  |  |  |  |
| Commercial fishing | 1,360 | 4,134 | 5,495 | 55.4 |
| Seafood manufacturing | 54,716 | 1,807 | 56,523 | 90.9 |
| **Subtotal** | **56,076** | **5,941** | **62,018** | **86.0** |
| % of total Idaho exports | 0.1 | 0.0 | 0.1 |  |
| **Total natural resources exports** | **17,462,383** | **1,374,509** | **18,868,892** | **72.0** |
| Total AgWest Seven-State Region exports | 53,593,004 | 9,637,629 | 63,230,633 | 32.3 |
| Natural resources as a % of Idaho exports | 27.6 | 2.2 | 29.8 |  |

\*Includes domestic exports, Federal Government demand, and inventory exported

Considering the total effects generated by natural resource exports on the state economy:

* $16.5 billion in direct agriculture and food processing export sales created;
  + 126,465 Idaho jobs, or 11.5 percent of jobs in the state.
  + $30.9 billion in sales, or 15.8 percent of Idaho’s total economic output
  + $11.5 billion in value-added, or 11.8 percent of Idaho’s gross state product (GSP).
* $2.3 billion in direct forestry and wood product exports sales created;
  + 17,654 Idaho jobs, or 1.6 percent of jobs in the state.
  + $4.1 billion in sales, or 2.1 percent of Idaho’s total economic output.
  + $$1.7 billion in value-added, or 1.7 percent of Idaho’s gross state product (GSP).
* $62.0 million in direct fishing and seafood manufacturing export sales created;
  + 417 Idaho jobs, or 0.04 percent of jobs in the state.
  + $88.0 million in sales, or 0.04 percent of Idaho’s total economic output
  + $27.5 million in value-added, or 0.03 percent of Idaho’s gross state product (GSP)

Table . Idaho Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 58,112 | 10,569,509 | 4,525,342 |
| Support activities for agriculture | 374 | 24,981 | 19,101 |
| Food mfg. except soft drinks, water, and seafood | 67,979 | 20,335,218 | 6,947,948 |
| **Subtotal** | **126,465** | **30,929,708** | **11,492,390** |
| % of total Idaho economy | 11.5 | 15.8 | 11.8 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 2,157 | 253,327 | 158,138 |
| Support activities for forestry | 19 | 627 | 945 |
| Wood products manufacturing | 15,478 | 3,848,463 | 1,551,637 |
| **Subtotal** | **17,654** | **4,102,417** | **1,710,721** |
| % of total Idaho economy | 1.6 | 2.1 | 1.7 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 127 | 6,278 | 5,843 |
| Seafood manufacturing | 290 | 81,681 | 21,625 |
| **Subtotal** | **417** | **87,960** | **27,468** |
| % of total Idaho economy | 0.04 | 0.04 | 0.03 |
| **Total natural resources** | **144,535** | **35,120,085** | **13,230,579** |
| Total Idaho | 1,095,899 | 195,712,152 | 97,768,091 |
| % of total Idaho economy | 13.2 | 17.9 | 13.5 |

## Montana

Montana’s natural resource industries directly contribute 6.9 percent of jobs, 6.1 percent of sales, and 4.0 percent to the state’s overall economy driven by the agriculture and food manufacturing sector.

* The agriculture and food manufacturing sector directly accounts for 41,831 jobs (6.1% of Montana’s jobs), $6.2 billion in sales (5.1% of state sales), and $2.0 billion of Gross State Product (3.4% of Montana’s GSP).
* Forestry and wood products directly accounts for 4,419 jobs (0.6% of Montana’s jobs), $1.1 billion in sales (0.9% of state sales), and $379.6 million of Gross State Product (0.6% of Montana’s GSP).
* Commercial fishing (Montana does not have a seafood manufacturing industry) directly accounts for 946 jobs (0.14% of Montana’s jobs), $8.5 million in sales (0.01% of state sales), and $8.4 million of Gross State Product (0.01 of Montana’s GSP).

Table . Montana natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food manufacturing** |  |  |  |
| Agricultural farmgate production | 29,946 | 3,712,444 | 1,409,549 |
| Support activities for agriculture | 6,002 | 242,669 | 230,461 |
| Food mfg. except soft drinks, water, and seafood | 5,883 | 2,277,501 | 371,675 |
| **Subtotal** | **41,831** | **6,232,614** | **2,011,685** |
| Agriculture and food mfg. % of Montana | 6.1 | 5.1 | 3.4 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 1,236 | 112,418 | 69,380 |
| Support activities for forestry | 248 | 7,348 | 11,344 |
| Wood products manufacturing | 2,936 | 1,003,201 | 298,829 |
| **Subtotal** | **4,419** | **1,112,968** | **379,552** |
| Forestry and wood products % of Montana | 0.6 | 0.9 | 0.6 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 946 | 8,518 | 8,421 |
| Seafood manufacturing | 0 | 0 | 0 |
| **Subtotal** | **946** | **8,518** | **8,421** |
| Total fishing and seafood mfg. % of Montana | 0.14 | 0.01 | 0.01 |
| **Total natural resources** | **47,196** | **7,364,100** | **2,399,658** |
| Total Montana | 688,711 | 121,332,003 | 59,581,796 |
| Natural resource % of Montana | 6.9 | 6.1 | 4.0 |

The total effects of Montana’s natural resource industries contribute 10.4 percent of jobs, 9.6 percent of sales, and 7.7 percent to the state’s overall economy.

* The job multiplier of 1.51 indicates that for every job within the natural resources, another 0.51 jobs are created in supporting industries.
* The sales multiplier of 1.59 indicates that for every $1.00 in sales generated by the natural resources, $0.59 in sales is generated in supporting industries.
* The value-added multiplier of 1.90 indicates that for every $1 of value-added activity generated by the natural resources an additional $0.90 of value-added activity is generated in the state’s economy.

Table . Montana natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 44,303 | 6,263,473 | 2,690,084 |
| Support activities for agriculture | 7,007 | 423,256 | 319,473 |
| Food mfg. except soft drinks, water, and seafood | 11,519 | 3,278,966 | 874,379 |
| **Subtotal** | **62,829** | **9,965,695** | **3,883,936** |
| % of total Montana economy | 9.1 | 8.2 | 6.5 |
| Multiplier | 1.50 | 1.60 | 1.93 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 1,582 | 173,889 | 100,236 |
| Support activities for forestry | 289 | 12,817 | 15,725 |
| Wood products manufacturing | 5,808 | 1,513,499 | 554,974 |
| **Subtotal** | **7,678** | **1,700,205** | **670,936** |
| % of total Montana economy | 1.1 | 1.4 | 1.1 |
| Multiplier | 1.74 | 1.51 | 1.77 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 975 | 13,725 | 11,035 |
| Seafood manufacturing | 0 | 0 | 0 |
| **Subtotal** | **975** | **13,725** | **11,035** |
| % of total Montana economy | 0.1 | 0.0 | 0.0 |
| Multiplier | 1.03 | 1.61 | 1.31 |
| **Total natural resources** | **71,482** | **11,679,625** | **4,565,906** |
| Total Montana | 688,711 | 121,332,003 | 59,581,796 |
| Natural resource % of Montana | 10.4 | 9.6 | 7.7 |
| Multiplier | 1.51 | 1.59 | 1.90 |

Montana’s natural resource industries represent 15.2 percent of the state’s overall exports. The industries are highly export dependent. Exports represent 73.2 percent of the state’s natural resource sectors’ sales.

* Agriculture and food manufacturing accounts for 12.9 percent of Montana’s total exports and 73.3 percent of sector sales.
* Forestry and wood product production exports account for 2.3 percent of Montana’s total exports, and 72.7 percent of sector sales.
* Fishing exports account for 0.00 percent of Montana’s total exports, and 44.8 percent of sector sales.

Table . Exports both domestic and international for Montana natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of total sector sales** |
| **Agriculture and food manufacturing** |  |  |  |  |
| Agricultural farmgate production | 2,240,769 | 347,013 | 2,587,782 | 69.7 |
| Support activities for agriculture | 44,817 | 278 | 45,096 | 18.6 |
| Food mfg. except soft drinks, water, and seafood | 1,818,232 | 120,062 | 1,938,294 | 85.1 |
| **Subtotal** | **4,103,818** | **467,354** | **4,571,172** | **73.3** |
| % of total Montana exports | 11.5 | 1.3 | 12.9 |  |
| **Forestry and wood products** |  |  |  |  |
| Forest products growth and harvest | 39,615 | 12,686 | 52,301 | 46.5 |
| Support activities for forestry | 901 | 10 | 911 | 12.4 |
| Wood products manufacturing | 713,666 | 49,802 | 763,468 | 76.1 |
| **Subtotal** | **754,183** | **62,498** | **816,681** | **72.7** |
| % of total Montana exports | 2.1 | 0.2 | 2.3 |  |
| **Fishing and seafood manufacturing** |  |  |  |  |
| Commercial fishing | 267 | 3,552 | 3,819 | 44.8 |
| Seafood manufacturing | 0 | 0 | 0 | 0.0 |
| **Subtotal** | **267** | **3,552** | **3,819** | **44.8** |
| % of total Montana exports | 0.0 | 0.0 | 0.0 |  |
| **Total natural resources exports** | **4,858,267** | **533,404** | **5,391,672** | **73.2** |
| Total AgWest Seven State Region exports | 28,831,095 | 6,700,003 | 35,531,097 | 29.3 |
| Natural resources as a % of Montana exports | 13.7 | 1.5 | 15.2 |  |

\*Includes domestic exports, Federal Government demand, and inventory exported

Considering the total effects generated by natural resource exports on the state economy:

* $4.6 billion in direct agriculture and food processing export sales created;
  + 56,176 Montana jobs, or 8.2 percent of jobs in the state.
  + $8.9 billion in sales, or 7.3 percent of Montana’s total economic output
  + $3.5 billion in value-added, or 5.8 percent of Montana’s gross state product (GSP).
* $816.7 million in direct forestry and wood product exports sales created;
  + 6,553 Montana jobs, or 1.0 percent of jobs in the state.
  + $1.4 billion in sales, or 1.2 percent of Montana’s total economic output.
  + $559.3 million in value-added, or 0.9 percent of Montana’s gross state product (GSP).
* $62.0 million in direct commercial fishing export sales created;
  + 438 Montana jobs, or 0.06 percent of jobs in the state.
  + $6.6 million in sales, or 0.01 percent of Montana’s total economic output
  + $5.0 million in value-added, or 0.01 percent of Montana’s gross state product (GSP)

Table . Montana Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 38,862 | 5,174,430 | 2,300,785 |
| Support activities for agriculture | 1,313 | 79,601 | 60,086 |
| Food mfg. except soft drinks, water, and seafood | 16,001 | 3,638,833 | 1,115,545 |
| **Subtotal** | **56,176** | **8,902,864** | **3,476,416** |
| % of total Montana economy | 8.2 | 7.3 | 5.8 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 936 | 99,453 | 58,441 |
| Support activities for forestry | 36 | 1,609 | 1,974 |
| Wood products manufacturing | 5,554 | 1,311,132 | 498,926 |
| **Subtotal** | **6,553** | **1,412,193** | **559,341** |
| % of total Montana economy | 1.0 | 1.2 | 0.9 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 438 | 6,206 | 4,967 |
| Seafood manufacturing | 0 | 0 | 0 |
| **Subtotal** | **438** | **6,206** | **4,967** |
| % of total Montana economy | 0.06 | 0.01 | 0.01 |
| **Total natural resources** | **63,167** | **10,321,263** | **4,040,725** |
| Total Montana | 688,711 | 121,332,003 | 59,581,769 |
| % of total Montana economy | 9.2 | 8.5 | 6.8 |

## Oregon

Oregon’s natural resource industries directly contribute 6.5 percent of jobs, 8.0 percent of sales, and 5.1 percent to the state’s overall economy driven by the agriculture and food manufacturing sector.

* The agriculture and food manufacturing sector directly accounts for 119,581 jobs (4.8% of Oregon’s jobs), $25.0 billion in sales (5.2% of state sales), and $7.7 billion of Gross State Product (2.8% of Oregon’s GSP).
* Forestry and wood products directly accounts for 36,595 jobs (1.5% of Oregon’s jobs), $12.7 billion in sales (2.6% of state sales), and $6.1 billion of Gross State Product (2.2% of Oregon’s GSP).
* Commercial fishing and seafood manufacturing directly accounts for 5,083 jobs (0.2% of Oregon’s jobs), $676.0 million in sales (0.14% of state sales), and $256.0 million of Gross State Product (0.09% of Oregon’s GSP).

Table . Oregon natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food manufacturing** |  |  |  |
| Agricultural farmgate production | 59,527 | 6,267,903 | 2,454,057 |
| Support activities for agriculture | 18,937 | 911,655 | 800,012 |
| Food mfg. except soft drinks, water, and seafood | 41,117 | 17,865,548 | 4,490,770 |
| **Subtotal** | **119,581** | **25,045,106** | **7,744,840** |
| Agriculture and food mfg. % of Oregon | 4.8 | 5.2 | 2.8 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 7,871 | 986,230 | 706,658 |
| Support activities for forestry | 2,504 | 143,445 | 230,368 |
| Wood products manufacturing | 26,221 | 11,647,867 | 5,119,933 |
| **Subtotal** | **36,595** | **12,777,542** | **6,056,959** |
| Forestry and wood products % of Oregon | 1.5 | 2.6 | 2.2 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 3,944 | 169,740 | 167,813 |
| Seafood manufacturing | 1,139 | 506,300 | 88,160 |
| **Subtotal** | **5,083** | **676,040** | **255,973** |
| Total fishing and seafood mfg. % of Oregon | 0.2 | 0.14 | 0.09 |
| **Total natural resources** | **161,259** | **38,498,688** | **14,057,772** |
| Total Oregon | 2,494,461 | 482,344,131 | 273,437,380 |
| Natural resource % of Oregon | 6.5 | 8.0 | 5.1 |

The total effects of Oregon’s natural resource industries contribute 10.7 percent of jobs, 12.2 percent of sales, and 9.4 percent to the state’s overall economy.

* The job multiplier of 1.66 indicates that for every job within the natural resources, another 0.66 jobs are created in supporting industries.
* The sales multiplier of 1.52 indicates that for every $1.00 in sales generated by the natural resources, $0.52 in sales is generated in supporting industries.
* The value-added multiplier of 1.84 indicates that for every $1 of value-added activity generated by the natural resources an additional $0.84 of value-added activity is generated in the state’s economy.

Table . Oregon natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 82,773 | 10,690,442 | 5,039,652 |
| Support activities for agriculture | 22,904 | 1,650,188 | 1,188,010 |
| Food mfg. except soft drinks, water, and seafood | 84,549 | 26,128,020 | 9,321,369 |
| **Subtotal** | **190,226** | **38,468,649** | **15,549,030** |
| % of total Oregon economy | 7.6 | 8.0 | 5.7 |
| Multiplier | 1.59 | 1.54 | 2.01 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 11,075 | 1,596,126 | 1,063,233 |
| Support activities for forestry | 3,028 | 259,651 | 342,093 |
| Wood products manufacturing | 56,117 | 17,335,349 | 8,444,862 |
| **Subtotal** | **70,221** | **19,191,125** | **9,850,188** |
| % of total Oregon economy | 2.8 | 4.0 | 3.6 |
| Multiplier | 1.92 | 1.50 | 1.63 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 4,480 | 271,767 | 227,463 |
| Seafood manufacturing | 2,125 | 693,955 | 197,871 |
| **Subtotal** | **6,605** | **965,722** | **425,334** |
| % of total Oregon economy | 0.3 | 0.2 | 0.2 |
| Multiplier | 1.30 | 1.43 | 1.66 |
| **Total natural resources** | **267,052** | **58,625,496** | **25,824,553** |
| Total Oregon | 2,494,461 | 482,344,131 | 273,437,380 |
| Natural resource % of Oregon | 10.7 | 12.2 | 9.4 |
| Multiplier | 1.66 | 1.52 | 1.84 |

Oregon’s natural resource industries represent 20.3 percent of the state’s overall exports. The industries are highly export dependent. Exports represent 71.3 percent of the state’s natural resource sectors’ sales.

* Agriculture and food manufacturing accounts for 13.0 percent of Oregon’s total exports and 70.5 percent of sector sales.
* Forestry and wood product production exports account for 6.8 percent of Oregon’s total exports, and 72.3 percent of sector sales.
* Fishing and seafood manufacturing exports account for 0.40 percent of Oregon’s total exports, and 84.6 percent of sector sales.

Table . Exports both domestic and international for Oregon natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of total sector sales** |
| **Agriculture and food manufacturing** |  |  |  |  |
| Agricultural farmgate production | 2,912,953 | 572,382 | 3,485,335 | 55.6 |
| Support activities for agriculture | 369,086 | 1,002 | 370,088 | 40.6 |
| Food mfg. except soft drinks, water, and seafood | 12,948,121 | 848,570 | 13,796,691 | 77.2 |
| **Subtotal** | **16,230,159** | **1,421,954** | **17,652,114** | **70.5** |
| % of total Oregon exports | 12.0 | 1.1 | 13.0 |  |
| **Forestry and wood products** |  |  |  |  |
| Forest products growth and harvest | 236,655 | 123,302 | 359,957 | 36.5 |
| Support activities for forestry | 38,006 | 216 | 38,222 | 26.6 |
| Wood products manufacturing | 8,079,836 | 763,449 | 8,843,285 | 75.9 |
| **Subtotal** | **8,354,497** | **886,967** | **9,241,464** | **72.3** |
| % of total Oregon exports | 6.2 | 0.7 | 6.8 |  |
| **Fishing and seafood manufacturing** |  |  |  |  |
| Commercial fishing | 34,770 | 70,787 | 105,557 | 62.2 |
| Seafood manufacturing | 451,524 | 14,713 | 466,237 | 92.1 |
| **Subtotal** | **486,293** | **85,501** | **571,794** | **84.6** |
| % of total Oregon exports | 0.4 | 0.1 | 0.4 |  |
| **Total natural resources exports** | **25,070,950** | **2,394,422** | **27,465,372** | **71.3** |
| Total AgWest Seven-State Region exports | 107,606,271 | 27,791,909 | 135,398,180 | 28.1 |
| Natural resources as a % of Oregon exports | 18.5 | 1.8 | 20.3 |  |

\* Includes domestic exports, Federal Government demand, and inventory exported

Considering the total effects generated by natural resource exports on the state economy:

* $17.7 billion in direct agriculture and food processing export sales created;
  + 157,905 Oregon jobs, or 6.3 percent of jobs in the state.
  + $32.1 billion in sales, or 6.6 percent of Oregon’s total economic output
  + $13.1 billion in value-added, or 4.8 percent of Oregon’s gross state product (GSP).
* $9.2 billion in direct forestry and wood product exports sales created;
  + 60,398 Oregon jobs, or 2.4 percent of jobs in the state.
  + $16.2 billion in sales, or 3.4 percent of Oregon’s total economic output.
  + $8.3 billion in value-added, or 3.0 percent of Oregon’s gross state product (GSP).
* $571.8 million in direct fishing and seafood manufacturing export sales created;
  + 5,800 Oregon jobs, or 0.23 percent of jobs in the state.
  + $896.7 million in sales, or 0.19 percent of Oregon’s total economic output
  + $383.0 million in value-added, or 0.14 percent of Oregon’s gross state product (GSP)

Table . Oregon Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 55,994 | 6,922,543 | 3,421,474 |
| Support activities for agriculture | 9,291 | 681,657 | 502,630 |
| Food mfg. except soft drinks, water, and seafood | 92,620 | 24,455,088 | 9,156,099 |
| **Subtotal** | **157,905** | **32,059,288** | **13,080,203** |
| % of total Oregon economy | 6.3 | 6.6 | 4.8 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 5,320 | 703,425 | 472,084 |
| Support activities for forestry | 806 | 70,400 | 95,000 |
| Wood products manufacturing | 54,361 | 15,497,826 | 7,700,161 |
| **Subtotal** | **60,398** | **16,271,651** | **8,267,245** |
| % of total Oregon economy | 2.4 | 3.4 | 3.0 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 2,796 | 171,294 | 142,417 |
| Seafood manufacturing | 3,004 | 725,450 | 240,466 |
| **Subtotal** | **5,800** | **896,744** | **382,883** |
| % of total Oregon economy | 0.23 | 0.19 | 0.14 |
| **Total natural resources** | **224,103** | **49,227,683** | **21,730,331** |
| Total Oregon | 2,494,461 | 482,344,131 | 273,473,380 |
| % of total Oregon economy | 9.0 | 10.2 | 7.9 |

## Washington

Washington’s natural resource industries directly contribute 4.8 percent of jobs, 4.5 percent of sales, and 2.6 percent to the state’s overall economy driven by the agriculture and food manufacturing sector.

* The agriculture and food manufacturing sector directly accounts for 171,469 jobs (3.9% of Washington’s jobs), $34.6 billion in sales (3.2% of state sales), and $11.9 billion of Gross State Product (1.8% of Washington’s GSP).
* Forestry and wood products directly accounts for 28,786 jobs (0.6% of Washington’s jobs), $11.3 billion in sales (1.0% of state sales), and $4.8 billion of Gross State Product (0.7% of Washington’s GSP).
* Commercial fishing and seafood manufacturing directly accounts for 12,864 jobs (0.29% of Washington’s jobs), $3.1 billion in sales (0.29% of state sales), and $1.2 billion of Gross State Product (0.17% of Washington’s GSP).

Table . Washington natural resources sectors' employment, sales and value-added (direct effects only) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food manufacturing** |  |  |  |
| Agricultural farmgate production | 90,703 | 10,311,290 | 4,976,144 |
| Support activities for agriculture | 29,062 | 1,233,926 | 1,157,472 |
| Food mfg. except soft drinks, water, and seafood | 51,705 | 23,039,473 | 5,779,923 |
| **Subtotal** | **171,469** | **34,584,689** | **11,913,538** |
| Agriculture and food mfg. % of Washington | 3.9 | 3.2 | 1.8 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 5,768 | 754,362 | 548,738 |
| Support activities for forestry | 1,848 | 90,273 | 127,639 |
| Wood products manufacturing | 21,171 | 10,478,819 | 4,089,027 |
| **Subtotal** | **28,786** | **11,323,454** | **4,765,403** |
| Forestry and wood products % of Washington | 0.6 | 1.0 | 0.7 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 7,566 | 505,570 | 499,830 |
| Seafood manufacturing | 5,298 | 2,620,577 | 675,383 |
| **Subtotal** | **12,864** | **3,126,147** | **1,175,213** |
| Total fishing and seafood mfg. % of Washington | 0.29 | 0.29 | 0.17 |
| **Total natural resources** | **213,119** | **49,034,290** | **17,854,155** |
| Total Washington | 4,453,309 | 1,082,314,571 | 676,525,170 |
| Natural resource % of Washington | 4.8 | 4.5 | 2.6 |

The total effects of Washington’s natural resource industries contribute 7.2 percent of jobs, 7.0 percent of sales, and 5.2 percent to the state’s overall economy.

* The job multiplier of 1.51 indicates that for every job within the natural resources, another 0.51 jobs are created in supporting industries.
* The sales multiplier of 1.54 indicates that for every $1.00 in sales generated by the natural resources, $0.54 in sales is generated in supporting industries.
* The value-added multiplier of 1.95 indicates that for every $1 of value-added activity generated by the natural resources an additional $0.95 of value-added activity is generated in the state’s economy.

Table . Washington natural resource industries' economic contributions (direct, indirect, and induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 120,303 | 17,526,505 | 9,577,234 |
| Support activities for agriculture | 33,322 | 2,263,032 | 1,791,789 |
| Food mfg. except soft drinks, water, and seafood | 95,064 | 33,608,695 | 12,250,089 |
| **Subtotal** | **248,688** | **53,398,233** | **23,889,112** |
| % of total Washington economy | 5.6 | 4.9 | 3.5 |
| Multiplier | 1.45 | 1.54 | 2.01 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 7,642 | 1,211,360 | 840,165 |
| Support activities for forestry | 2,119 | 165,561 | 197,587 |
| Wood products manufacturing | 45,189 | 16,332,687 | 7,821,484 |
| **Subtotal** | **54,950** | **17,709,608** | **8,859,236** |
| % of total Washington economy | 1.2 | 1.6 | 1.3 |
| Multiplier | 1.91 | 1.56 | 1.86 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 9,305 | 929,428 | 770,121 |
| Seafood manufacturing | 9,464 | 3,636,023 | 1,322,947 |
| **Subtotal** | **18,768** | **4,565,452** | **2,093,068** |
| % of total Washington economy | 0.4 | 0.4 | 0.3 |
| Multiplier | 1.46 | 1.46 | 1.78 |
| **Total natural resources** | **322,406** | **75,673,293** | **34,841,416** |
| Total Washington | 4,453,309 | 1,082,314,571 | 676,525,170 |
| Natural resource % of Washington | 7.2 | 7.0 | 5.2 |
| Multiplier | 1.51 | 1.54 | 1.95 |

Washington’s natural resource industries represent 8.3 percent of the state’s overall exports. The industries are highly export dependent. Exports represent 62.9 percent of the state’s natural resource sectors’ sales.

* Agriculture and food manufacturing accounts for 5.8 percent of Washington’s total exports and 61.9 percent of sector sales.
* Forestry and wood product production exports account for 1.9 percent of Washington’s total exports, and 61.2 percent of sector sales.
* Fishing and seafood manufacturing exports account for 0.70 percent of Washington’s total exports, and 79.8 percent of sector sales.

Table . Exports both domestic and international for Washington natural resource industries (direct effects only) in 2021 dollars

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Direct Effects**  **by Sector** | **Domestic Exports\* ($000)** | **Foreign Exports ($000)** | **Export Total Sales ($000)** | **Exports as a % of total sector sales** |
| **Agriculture and food manufacturing** |  |  |  |  |
| Agricultural farmgate production | 4,542,802 | 1,088,312 | 5,631,114 | 54.6 |
| Support activities for agriculture | 399,842 | 1,404 | 401,247 | 32.5 |
| Food mfg. except soft drinks, water, and seafood | 13,924,604 | 1,435,092 | 15,377,696 | 66.7 |
| **Subtotal** | **18,867,248** | **2,542,809** | **21,410,057** | **61.9** |
| % of total Washington exports | 5.1 | 0.7 | 5.8 |  |
| **Forestry and wood products** |  |  |  |  |
| Forest products growth and harvest | 205,024 | 95,782 | 300,806 | 39.9 |
| Support activities for forestry | 21,310 | 124 | 21,434 | 23.7 |
| Wood products manufacturing | 5,918,794 | 689,322 | 6,608,116 | 63.1 |
| **Subtotal** | **6,145,129** | **785,228** | **6,930,357** | **61.2** |
| % of total Washington exports | 1.7 | 0.2 | 1.9 |  |
| **Fishing and seafood manufacturing** |  |  |  |  |
| Commercial fishing | 24,853 | 210,840 | 235,693 | 46.6 |
| Seafood manufacturing | 2,183,155 | 77,008 | 2,260,163 | 86.2 |
| **Subtotal** | **2,208,008** | **287,848** | **2,495,856** | **79.8** |
| % of total Washington exports | 0.6 | 0.1 | 0.7 |  |
| **Total natural resources exports** | **27,220,385** | **3,615,884** | **30,836,269** | **62.9** |
| Total AgWest Seven-State Region exports | 305,445,441 | 66,627,951 | 372,073,392 | 34.4 |
| Natural resources as a % of Washington exports | 7.3 | 1.0 | 8.3 |  |

\*Includes domestic exports, Federal Government demand, and inventory exported

Considering the total effects generated by natural resource exports on the state economy:

* $21.4 billion in direct agriculture and food processing export sales created;
  + 188,548 Washington jobs, or 4.2 percent of jobs in the state.
  + $39.8 billion in sales, or 3.7% of Washington’s total economic output
  + $18.0 billion in value-added, or 2.7 percent of Washington’s gross state product (GSP).
* $6.9 billion in direct forestry and wood product exports sales created;
  + 40,083 Washington jobs, or 0.9 percent of jobs in the state.
  + $12.6 billion in sales, or 1.2 percent of Washington’s total economic output.
  + $6.3 billion in value-added, or 0.9 percent of Washington’s gross state product (GSP).
* $2.5 billion in direct fishing and seafood manufacturing export sales created;
  + 17,147 Washington jobs, or 0.39 pe cent of jobs in the state.
  + $4.2 billion in sales, or 0.39 percent of Washington’s total economic output
  + $1.9 billion in value-added, or 0.28 percent of Washington’s gross state product (GSP)

Table . Washington Natural Resource Exports Economic Contributions (direct, indirect, induced effects) in 2021 dollars

|  |  |  |  |
| --- | --- | --- | --- |
| **Direct, Indirect and Induced Effects**  **by Sector** | **Full & Part-time Jobs** | **Sales ($000)** | **Value-added ($000)** |
| **Agriculture and food processing** |  |  |  |
| Agricultural farmgate production | 80,661 | 11,039,132 | 6,201,689 |
| Support activities for agriculture | 10,869 | 749,277 | 593,570 |
| Food mfg. except soft drinks, water, and seafood | 97,019 | 28,048,143 | 11,240,052 |
| Subtotal | 188,548 | 39,836,551 | 18,035,310 |
| % of total Washington economy | 4.2 | 3.7 | 2.7 |
| **Forestry and wood products** |  |  |  |
| Forest products growth and harvest | 3,968 | 577,035 | 402,443 |
| Support activities for forestry | 505 | 40,025 | 47,794 |
| Wood products manufacturing | 35,611 | 11,989,820 | 5,851,475 |
| Subtotal | 40,083 | 12,606,880 | 6,301,712 |
| % of total Washington economy | 0.9 | 1.2 | 0.9 |
| **Fishing and seafood manufacturing** |  |  |  |
| Commercial fishing | 4,367 | 440,355 | 362,155 |
| Seafood manufacturing | 12,781 | 3,734,949 | 1,542,670 |
| Subtotal | 17,147 | 4,175,304 | 1,904,825 |
| % of total Washington economy | 0.39 | 0.39 | 0.28 |
| **Total natural resources** | **245,778** | **56,618,736** | **26,241,847** |
| Total Washington | 4,453,309 | 1,082,314,571 | 676,525,170 |
| % of total Washington economy | 5.5 | 5.2 | 3.9 |

# Appendix: Sector and IMPLAN description for natural resource sectors.

**Agriculture and Food Manufacturing**

Agricultural farm gate production

1 Oilseed farming

2 Grain farming

3 Vegetable and melon farming

4 Fruit farming

5 Tree nut farming

6 Greenhouse, nursery, and floriculture

7 Tobacco farming

8 Cotton farming

9 Sugarcane and sugar beet farming

10 All other crop farming

11 Beef cattle ranching and farming…

12 Dairy cattle and milk production

13 Poultry and egg production

14 Animal production, except cattle and poultry and eggs

Support activities for agriculture

19 Support activities for agriculture and forestry

Food Processing except soft drinks, water, and seafood

63 Dog and cat food manufacturing

64 Other animal food manufacturing

65 Flour milling

66 Rice milling

67 Malt manufacturing

68 Wet corn milling

69 Soybean and other oilseed processing

70 Fats and oils refining and blending

71 Breakfast cereal manufacturing

72 Beet sugar manufacturing

73 Sugar cane mills and refining

74 Nonchocolate confectionery

75 Chocolate and confectionery from cacao beans

76 Confectionery from purchased chocolate

77 Frozen fruits, juices and vegetables

78 Frozen specialties manufacturing

79 Canned fruits and vegetables

80 Canned specialties

81 Dehydrated food products manufacturing

82 Cheese manufacturing

83 Dry, condensed, and evaporated dairy product manufacturing

84 Fluid milk manufacturing

85 Creamery butter manufacturing

86 Ice cream and frozen dessert mfg.

87 Frozen cakes and other pastries mfg.

88 Poultry processing

89 Animal, except poultry, slaughtering

90 Meat processed from carcasses

91 Rendering and meat byproduct processing

93 Bread and bakery product, except frozen

94 Cookie and cracker manufacturing

95 Dry pasta, mixes, and dough

96 Tortilla manufacturing

97 Roasted nuts and peanut butter

98 Other snack food manufacturing

99 Coffee and tea manufacturing

100 Flavoring syrup and concentrate

101 Mayonnaise, dressing, and sauce

102 Spice and extract manufacturing

103 All other food manufacturing

106 Breweries

107 Wineries

118 Distilleries

Tobacco product manufacturing

109 Tobacco product mfg

Fiber & leather manufacturing that primarily uses local inputs

110 Fiber, yarn, and thread mills

111 Broadwoven fabric mills

112 Narrow fabric mills and schiffli machine embroidery

113 Nonwoven fabric mills

114 Knit fabric mills

115 Textile and fabric finishing mills

116 Fabric coating mills

117 Carpet and rug mills

118 Curtain and linen mills

119 Textile bag and canvas mills

120 Rope, cordage, twine, tire cord and tire fabric mills

121 Other textile product mills

122 Hosiery and sock mills

123 Other apparel knitting mills

124 Cut and sew apparel contractors

125 Men’s and boys cut and sew apparel

126 Women’s and girls cut and sew apparel

127 Other cut and sew apparel manufacturing

128 Apparel accessories and other apparel

129 Leather and hide tanning and finishing

**Forestry and Wood Products**

Forest products growth and harvest

15 Forestry, forest products, and timber tract production

16 Commercial logging

Support activities for forestry

19 Support activities for agriculture and forestry

Wood Products Manufacturing

132 Sawmills

133 Wood preservation

134 Veneer and plywood manufacturing

135 Engineered wood member and truss manufacturing

136 Reconstituted wood product manufacturing

137 Wood windows and door manufacturing

138 Cut stock, resawing lumber, and planning

139 Other millworks, including flooring

140 Wood container and pallet manufacturing

143 All other miscellaneous wood product manufacturing

144 Pulp mills

145 Paper mills

146 Paperboard mills

147 Paperboard container manufacturing

148 Paper bag and coated and treated paper manufacturing

149 Stationery product manufacturing

150 Sanitary paper product manufacturing

151 All other converted paper product manufacturing

**Fishing and Seafood Manufacturing**

Commercial fishing

17 Commercial fishing

Seafood manufacturing

93 Seafood product preparation and packaging

1. IMPLAN (IMpact analysis for PLANning) is a commercially available database and software that can be used to construct input-output models for any county or combination of counties in the United States. IMPLAN uses secondary data on employment by sector in combination with Leontief type production functions to estimate industry output and value added for any county or economic region. [↑](#footnote-ref-2)