

WASHINGTON STATE AGRICULTURAL  
2003  
WORKFORCE IN



**AGRICULTURAL  
WORKFORCE IN  
WASHINGTON STATE**

Labor Market and  
Economic Analysis Branch  
Greg Weeks, *Director*

Prepared by  
Kirsta Glenn, *Chief Economist*  
Economic and Policy Analysis Unit

Washington State  
Employment Security Department  
Sylvia P. Mundy, *Commissioner*



# Agricultural Workforce in Washington State 2003



**Published June 2004**

Labor Market and  
Economic Analysis Branch  
Greg Weeks, *Director*

Prepared by Kirsta Glenn, *Chief Economist*  
Economic and Policy Analysis Unit

This report has been prepared in accordance with  
*RCW 50.38.060*

Washington State  
Employment Security Department  
Sylvia P. Mundy, *Commissioner*

- To order printed publications call (360) 438-4800
- This report and other agricultural and labor market information are available at [www.workforceexplorer.com](http://www.workforceexplorer.com)
- Or call our Labor Market Information Center at 1-800-215-1617

---

*The author wishes to acknowledge the guidance and information provided by Desmond O'Rourke, founder and CEO of Belrose, Inc., Valoria H. Loveland, the Director of the Washington Department of Agriculture, and Eric Hurlburt; the data, tables, and graphs provided by John Wines and Jeff Jaksich; the review provided by Ivars Graudins, Carolyn Cummins, David Wallace, and Alexander Roubinchtein, as well as, the layout, graphic design, and desktop publishing of Sandra K. Bailey and proofreading by Bonnie Dalebout.*

Employment Security is an equal opportunity employer and provider of employment and training services.  
Auxiliary aids and services are available upon request to persons with disabilities.

# TABLE OF CONTENTS

Figures .....	ii
Chapter 1 - Introduction .....	1
Chapter 2 - Agricultural Employment .....	4
Covered Employment .....	4
The Agricultural Industry .....	7
Chapter 3 - Hours and Earnings .....	22
Covered Employment and Payroll .....	22
Worker Earnings .....	23
Chapter 4 - Farm Structure .....	28
Farm Structure .....	28
Chapter 5 - Demographics and Unemployment .....	34
Characteristics of Agricultural Workers .....	34
Unemployment Claims .....	36
Chapter 6 - Outlook and Development .....	42
Outlook and New Developments .....	42
National Exports .....	44
National Trade Statistics for Top Washington Agricultural Products .....	45
Outlook .....	48
Chapter 7 - Conclusion .....	49
Appendices	
I. Total Agricultural Employment in Washington State, Statewide, and by Area (Benchmark: March 2003) .....	50
II. Employment of Seasonal Workers by Activity in Washington, Statewide, and by Agricultural Reporting Areas, 2003 .....	51
Glossary .....	55

# FIGURES

<i>Figure 1</i>	Covered Employment, NAICS Category Agriculture, Forestry, and Fishing Washington State Annual Data, 1990-2003 4th Qtr. 2003 Preliminary .....	4
<i>Figure 2</i>	Percent Distribution Within NAICS Category Agriculture, Forestry, Fishing, and Hunting Covered Employment, 1990 and 2003 4th Qtr. 2003 Preliminary .....	4
<i>Figure 3</i>	Covered Agricultural Employment NAICS 111, 112, 1151, and 1152 1990-2003, 4th Qtr. 2003 Preliminary .....	5
<i>Figure 4</i>	Covered Employment NAICS 111, 112, 1151, and 1152 4th Qtr. 2003 Preliminary .....	6
<i>Figure 5</i>	Percent Distribution of U.S. and Washington Farm and Farm-Related Employment, 2000 .....	8
<i>Figure 6</i>	Washington State Agricultural Receipts, 2002 .....	8
<i>Figure 7</i>	Food Processing Employment and Number of Firms in Washington State, 1990-2003 .....	9
<i>Figure 8</i>	Payroll Dollars are Inflation Adjusted Covered Employment, 2000-2003 4th Qtr. 2003 Preliminary .....	10
<i>Figure 9</i>	Covered Employment, 2003 4th Qtr. 2003 Preliminary .....	11
<i>Figure 10</i>	Total Non-Seasonal and Seasonal Agricultural Workers in Washington 1997-2003, Adjusted for Dual Job Holders and Non-Covered Employees ....	11
<i>Figure 11</i>	Seasonal Agricultural Employment Washington, Monthly 2000-2003 .....	12
<i>Figure 12</i>	Seasonal Farm Worker Survey; Production, Yield, Value, and Average Price from Washington Agricultural Statistics Service .....	13
<i>Figure 13</i>	Seasonal Employment Estimates for Apple Harvest Washington State, 2000-2003 .....	14
<i>Figure 14</i>	Annual Average, Seasonal Employment Estimates for all Cherry-Related Agricultural Activities 1994-2003 .....	15
<i>Figure 15</i>	Annual Percent Change in Seasonal Employment and Output in Cherries, 1995-2003 .....	15
<i>Figure 16</i>	Seasonal Employment and Output in Grapes 1994-2003 .....	16
<i>Figure 17</i>	Annual Output of Grapes, 1999-2003 .....	16
<i>Figure 18</i>	Employment and Payroll in Wineries Washington 1990 and 2003 4th Qtr. 2003 Preliminary .....	17
<i>Figure 19</i>	Asparagus Acreage, Production, and Value of Receipts .....	18
<i>Figure 20</i>	Asparagus Production, Imports, and Use Per Capita .....	18
<i>Figure 21</i>	Cattle Production in Washington State, 2003 .....	19
<i>Figure 22</i>	Number of Dairy Establishments and Covered Employment in Dairies 1990-2003 4th Qtr. 2003 Preliminary .....	19
<i>Figure 23</i>	Number of Dairy Farms Washington State, 1999-2003 .....	20
<i>Figure 24</i>	Workforce Development Area Map by Counties ....	21
<i>Figure 25</i>	Covered Employment and Payroll, 2003 4th Qtr. 2003 Preliminary .....	22
<i>Figure 26</i>	Real Average Annual Pay Per Job in Agriculture and Real Wage Differential Washington State, 1990-2003 .....	23

# FIGURES

<i>Figure 27</i>	Percent of Workers Earning an Average Annual Wage Over \$10,000 .....	24	<i>Figure 42</i>	Agricultural Employment and Agricultural Unemployment Insurance Claims Washington State, January 2002-December 2003 ..	37
<i>Figure 28</i>	Workers in Agricultural and in Nonagricultural Industries .....	24	<i>Figure 43</i>	Continued Claims for the Top 15 Agricultural Industries, Standard Industrial Classification (SIC) Codes, Washington State, 2003 .....	37
<i>Figure 29</i>	Workers by Size of Firm .....	25	<i>Figure 44</i>	Continued Claims for Top 10 Occupation Groups Standard Occupational Categories (SOC) Codes Washington State, 2001-2003 .....	38
<i>Figure 30</i>	Farm Income and Expenses, Thousands of Dollars, Washington and the U.S., 2000 and 2002 .....	26	<i>Figure 45</i>	Distribution of Continued Claims by Race and Ethnicity, Washington State, 2003 .....	39
<i>Figure 31</i>	Distribution of Farms by Size Washington State, 1997 and 2002 .....	28	<i>Figure 46</i>	Female Claimants/Female Workers for Agriculture and for all Industries, Washington State, 2002 .....	39
<i>Figure 32</i>	Number of Agricultural Firms .....	29	<i>Figure 47</i>	National Agricultural Workers Survey, 1997-1998 .....	40
<i>Figure 33</i>	Agriculture Active Firms by Region .....	29	<i>Figure 48</i>	Exports From Washington State, 2001-2003 .....	42
<i>Figure 34</i>	Agriculture Active Firms by Size .....	30	<i>Figure 49</i>	Top Export Destinations for Washington Agricultural Products .....	43
<i>Figure 35</i>	Agriculture Active/Inactive Firms Washington State, 2001 and 2003 .....	31	<i>Figure 50</i>	Export Share of the Volume of Farm Production United States, 1990-2002. ....	44
<i>Figure 36</i>	Number of Firms Becoming Active/Inactive and Employees Per Firm .....	31	<i>Figure 51</i>	Change in Fresh Apple Exports .....	45
<i>Figure 37</i>	Farms by Value of Sales, Washington State, 2002 ..	32	<i>Figure 52</i>	Distribution of Dairy Exports, 2003 .....	46
<i>Figure 38</i>	Average Number of Agricultural Workers Working for More Than One Employer in a Year ..	34	<i>Figure 53</i>	White Wheat Exports, 2003 .....	46
<i>Figure 39</i>	Agricultural Worker Characteristics .....	35	<i>Figure 54</i>	Frozen Potato Exports, 2003 .....	47
<i>Figure 40</i>	Annual Average Employment for 2002 Based on Local Employment Dynamics (LED) Total Employment, Agriculture Defined as NAICS 111, 112, 1151, and 1152 .....	35	<i>Figure 55</i>	Beef Exports, 2003 .....	47
<i>Figure 41</i>	Total Unemployment Insurance Claims Washington State, 2000-2003 .....	36			

# Chapter 1 - Introduction

**Demand** – “Most often, people will buy items that allow more differentiation and have a higher value added component such as nicer homes, cars, clothes, and vacations.”



There are three major trends that are likely to affect agriculture over the next five to ten years. The first is a lack of growth in **demand** for agricultural products, the second is the **consolidation** of retailers of agricultural products, and the third is continued tightening of **environmental, health, and safety standards**.

## Demand

Agricultural goods are generally considered to be “inferior goods” in terms of economic theory because demand for these goods rise more slowly than does income. So, as American’s see their incomes rise, they may purchase more food or better quality food, but there is a limit. Most often, people will buy items that allow more differentiation and have a higher value added component such as nicer homes, cars, clothes, and vacations. Future demand for agricultural products is, thus, expected to grow slowly in response to increases in per capita income and population.

Exports add to domestic demand and imports subtract from it. Foreign demand may have more potential for growth in many developing countries because they are starting at lower income levels and have higher expected population growth rates. Still, foreign competition is expected to be intense as there is great room for productivity increases on developing country farms, and shipping and storage technologies are improving.

## Exports

Growth in foreign demand for fruit in the eighties and nineties was fueled by Asia. The 1997 financial crisis was a big setback. China has now captured much of the fruit export market in Asia<sup>1</sup>. Further limiting the potential of the Asian export market are heavy health and sanitation restrictions in Japan which make it prohibitively expensive to comply. The Republic of Korea does not allow apple imports at all. Taiwan continues to be a bright spot since China does not export there for political reasons. Taiwan will be opening to China and the apple industry expects to lose a large segment of this market. A weaker U.S. dollar and the growing Asian economies are expected to encourage exports of Washington food products and reduce the demand for imported products.



<sup>1</sup> Chart above is footnote #1

# Chapter 1 - Introduction

---

## Tastes

Fruits and vegetables are high in carbohydrates while cattle, chickens, and hogs are not. The Atkins diet with its prohibition against carbohydrates rather than saturated fat has been a boon to the cattle industry and has constrained demand for fruits and vegetables, especially potatoes. For the same reason, feed grain for cattle may be doing better than grain meant directly for human consumption. Although the pendulum will undoubtedly swing back over the next ten years, the greater ease of losing weight for some on a high protein diet is predicted to have a permanent and positive impact on the demand for beef. The reverse is true for the potato industry which is already seeing reduced demand.

## Mad Cow and Avian Flu

The one case of bovine spongiform encephalopathy (BSE) or mad cow disease in December 2003 in Yakima initially caused beef export forecasts to be lowered by more than 90 percent<sup>2</sup>. Strong domestic beef demand and poor feeding conditions for cattle due to harsh winter weather, and a ban on Canadian beef imports, have maintained beef prices. U.S. beef exports have been banned by major beef importers such as Japan, The Republic of South Korea, and Mexico. The U.S. and Mexico have finalized conditions under which U.S. exports of beef to Mexico can resume later this year.

The U.S. poultry industry has been affected by outbreaks of Avian Influenza (AI) in Delaware, New Jersey, Pennsylvania, Texas, and Maryland. It is expected that import bans of U.S. poultry will eventually be targeted to the specific states experiencing these outbreaks.

## Consolidation

Consolidation which has occurred across all aspects of the fruit industry has been driven by consolidation of retailers. The top five retailers now control the majority of food purchases. These large retailers are moving towards one or two suppliers of most produce. They want a supplier who can supply all year round with all the varieties customers want.

Wal-Mart and Costco are also non-food suppliers and use food as a hook to bring in customers. They, thus, are willing to offer produce at lower prices since they make their profit on other goods. Wal-Mart is now the largest food retailer in the world.

Consolidation among growers means that fewer people are operating farms in the state and there is a continuation of the closing of small farms. Added to the pressure from large retailers is the movement towards an almost totally sterile food handling system, electronic identification and other requirements at the cost of the supplier. Such a system requires a large capital investment and, thus, there are significant economies of scale for large operations.



**Tastes** – “The greater ease of losing weight for some on a high protein diet is predicted to have a permanent and positive impact on the demand for beef.”

**Consolidation** – “Wal-Mart is now the largest food retailer in the world.”



<sup>2</sup> Electronic Outlook Report from the Economic Research Service, January 27, 2004.



**Environmental, Health, and Safety Standards** – “Nowhere is this as important as in the area of water and irrigation.”

**Other Issues** – “Most of the wineries are boutique, a few have most of the market. It is a good business and has nice ties into tourism, but current producers are worried about potential over-production.”



## Environmental, Health, and Safety Standards

Continued concern about environmental, health, and safety standards also often favors large farms. Larger operations can afford specialists who understand the complex environmental and safety regulations and can afford legal advice on compliance. Nowhere is this as important as in the area of water and irrigation. A lighter snow pack exacerbates the tension between the competing interests of farmers, urban consumers, Indian tribes, and fishermen.

New worker health regulations are also often more difficult for small farms. Because it is not cost effective to have testing facilities on sight at a small farm, they are less able to manage the time and expense of testing workers and ensuring themselves against liability.

**Other issues** include demand for organic products and the possibility of genetically modifying food. Organic produce accounts for only about 2-3 percent of all fruit and, so, is a very small part of the market, but is a growing segment of Washington agriculture. Bio-engineered food may be important in the future, but is currently concentrated in corn and soybeans, which aren't grown in Washington. Potatoes have some potential as a bio-engineered food, but demand is constrained. For example, McDonalds, a large purchaser of frozen potatoes, cannot use bioengineered food because of foreign bans. There is currently, though, quite a bit of activity at Washington State University in the area of bio-tech issues.

Wine is much like cherries in Washington in that it has grown recently but from a very small initial acreage. Most of the wineries are boutique, a few have most of the market. It is a good business and has nice ties into tourism, but current producers are worried about potential over-production.

The availability of immigrant labor may become a factor of concern for growers. A scarcity of workers in 2003 may be, in part, due to the small apple crop in 2003, or to more difficulty coming into the U.S. due to homeland security. President Bush's amnesty program may actually lower immigrant labor available for farming if more immigrants are able to settle in permanent jobs. The decline in acreage under asparagus production also lowers the incentives for immigrants to come up to Washington, since it takes out part of their crop rotation from asparagus to cherries to apples to pears. The cost of labor is also a major issue when compared to other competitors. Washington now has the highest minimum wage in the United States.

**Washington** – “now has the highest minimum wage in the United States.”



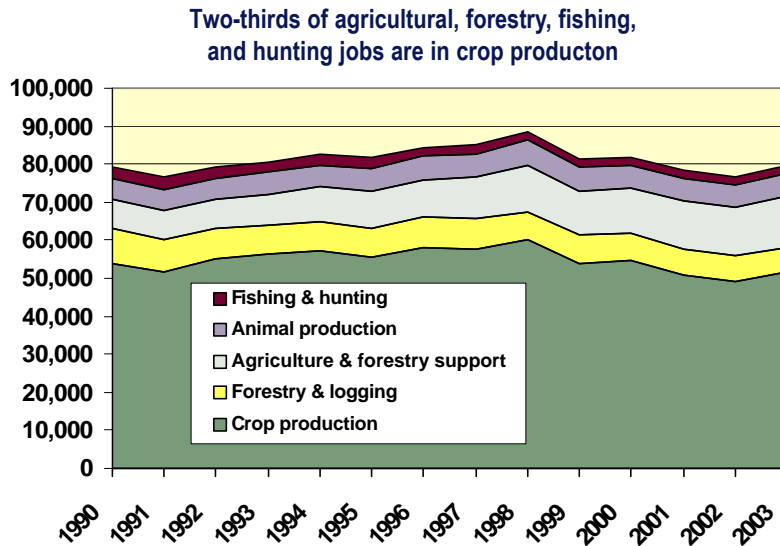


# Chapter 2 - Agricultural Employment

## COVERED EMPLOYMENT<sup>3</sup>

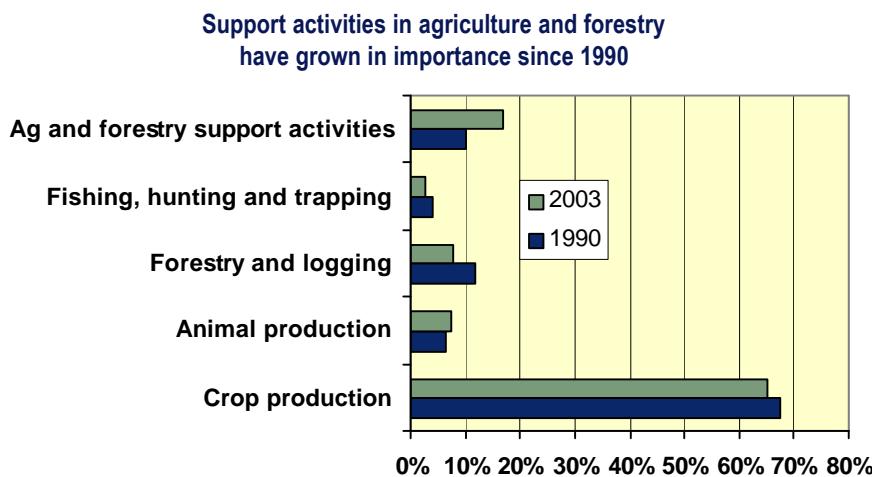
Washington's total agricultural, forestry, fishing, and hunting employment has remained almost constant over the past thirteen years, going from 79,300 in 1990 to 79,500 in 2003.

**Figure 1**  
Covered Employment, NAICS<sup>4</sup> Category - Agriculture, Forestry, and Fishing  
Washington State Annual Data 1990 to 2003, Preliminary 4<sup>th</sup> Quarter 2003  
Source: LMEA – Employment Security Department



Washington agricultural employment is dominated by crop production. In 2003, just under two-thirds of covered employment was concentrated in crop production. This is down from just over two-thirds in 1990.

**Figure 2**  
Percent Distribution within NAICS Category - Agriculture, Forestry, Fishing, and Hunting,  
Covered Employment 1990 and 2003, Preliminary 4<sup>th</sup> Quarter 2003  
Source: LMEA – Employment Security Department



**“Washington** – agricultural employment is dominated by crop production.”

<sup>3</sup> Covered employment refers to workers covered by the unemployment insurance system and certain federally covered workers. Covered employment accounts for about 90 percent of all employment in Washington.

<sup>4</sup> North American Industry Classification System, replaces the Standard Industrial Classification in 2000.



**“Forestry and logging – employment has been in a fairly steady structural decline at least since 1990.”**

Between 1990 and 2003 there was a shift from employment in forestry and logging activities and crop production towards agricultural and forestry support activities. According to the U.S. Census Bureau,

“These activities provide support services that are an essential part of agricultural and forestry production. They may be performed by the agriculture or forestry-producing establishment or conducted independently as an alternative source of inputs required for the production process for a given crop, animal, or forestry industry.”

Most are located in the rural, eastern part of the state with “Other Post Harvest Activities”—which includes fruit sorting, grading, and packing—being the major employer. Forestry and logging employment has been in a fairly steady structural decline at least since 1990.

### Covered Employment – Agriculture

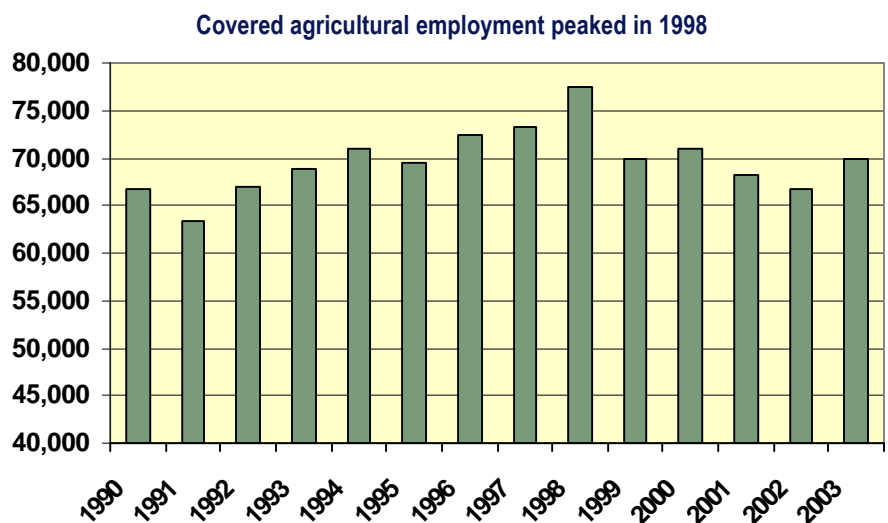
Covered employment in agriculture peaked in 1998, but has varied around an average of 69,700 since 1990. To test for a positive trend in agricultural employment, a trend line can be fitted to the employment points in the graph below. Such a line has a positive trend of about 270 workers added per year, but with considerable variation. From 1990 to 1998 this upward trend is quite evident, but since that time employment has decreased by about 7,600 workers.

Employment change in agriculture is erratic from year to year due to its sensitivity to changes in weather conditions, energy prices, the supply of available workers, the price of output, and so on. Our prediction is that employment is likely to vary around its long-term average into the near future.

**Figure 3**

Covered Agricultural Employment: NAICS 111, 112, 1151, and 1152  
1990 through 2003, Preliminary 4<sup>th</sup> Quarter 2003

Source: LMEA – Employment Security Department



## Chapter 2 - Agricultural Employment

Most agricultural employment is concentrated in the eastern portion of the state. In 1990, 82 percent of the state's agricultural employment was in eastern Washington, and in 2003 that percentage had increased to 82.8 percent. Only 21 percent of total state employment was in eastern Washington in 2003. This predominance of agricultural jobs in eastern Washington means that about one out of every ten workers in eastern Washington works directly in agriculture. In western Washington, less than one worker in 100 works in agriculture.

### Figure 4

Covered Employment: NAICS 111, 112, 1151, and 1152

2003, 4<sup>th</sup> Quarter Preliminary

Source: LMEA – Employment Security Department

#### One out of ten jobs in eastern Washington is in agriculture

	Agricultural Employment 2003	Agricultural Employment Change Since 1990	Percent of Total Employment in Each Area 2003
<b>Washington</b>	<b>69,895</b>	<b>4,453</b>	<b>2.6%</b>
Western	12,002	244	0.6%
Eastern	57,893	4,209	10.4%
<b>Columbia Basin</b>	<b>8,913</b>	<b>2,758</b>	<b>23.2%</b>
Adams	1,855	82	26.7%
Grant	7,057	2,676	22.4%
<b>North Central</b>	<b>15,348</b>	<b>-245</b>	<b>21.0%</b>
Chelan & Douglas	9,925	-460	22.4%
Kittitas	647	264	5.2%
Okanogan	4,776	-50	28.9%
<b>South Central</b>	<b>20,069</b>	<b>-309</b>	<b>20.2%</b>
Klickitat	1,203	627	20.6%
Yakima	18,866	-935	20.2%
<b>South Eastern Area</b>	<b>12,101</b>	<b>2,164</b>	<b>10.5%</b>
Benton & Franklin	9,288	1,147	10.3%
Walla Walla	2,813	1,017	11.2%
<b>Eastern Area</b>	<b>1,461</b>	<b>-159</b>	<b>0.6%</b>
Lincoln	287	-29	9.7%
Spokane	396	-52	0.2%
Whitman	421	-40	2.8%
<b>Other Eastern Areas</b>	<b>358</b>	<b>-38</b>	<b>1.6%</b>

**“Okanogan County has the highest percentage of agricultural workers at 28.9 percent of the state’s total, while Yakima has the highest number of agricultural workers, 18,866 in 2003.”**



Okanogan County has the highest percentage of agricultural workers at 28.9 percent of the state's total, while Yakima has the highest number of agricultural workers, 18,866 in 2003. Klickitat had the greatest percent increase in agricultural employment between 1990 and 2003, 109 percent, followed by Kittitas, Grant, and Walla Walla. Grant and Walla Walla counties also added the most new workers in terms of absolute numbers, 2,676 and 1,017 respectively.

About half of the counties in Washington have lost agricultural workers over the past thirteen years. Douglas County lost the greatest number, down 1,025 workers since 1990, while Yakima was down 935 workers. Most of the counties that lost agricultural workers, though, were urban—King, Pierce, Snohomish, Spokane, and Kitsap counties were all down.

---

## Chapter 2 - Agricultural Employment



**“...Lost farm employment** were Yakima County and the Wenatchee labor market area (Chelan/Douglas counties).”

The two eastern areas which lost farm employment were Yakima County and the Wenatchee labor market area (Chelan and Douglas counties). Yakima lost employment in fruit tree farming, hay, and other miscellaneous farming. Chelan and Douglas counties also lost employment in fruit tree production and other post harvest activities.

Grant, Klickitat, Benton, Franklin, and Walla Walla counties have all added agricultural workers since 1990. Grant County gained workers in fruit tree farming as well as some in cattle ranching and support activities for crop production. Klickitat had most of its increase in fruit tree farming and other miscellaneous crop farming. Benton County is up in vegetable farming and other post harvest activities although it is down in fruit tree farming. Franklin, on the other hand, is down in vegetable farming but up in fruit tree farming. Finally, Walla Walla saw gains across the board including fruit tree farming, vegetable farming, grain, and cattle.

### THE AGRICULTURAL INDUSTRY

Farming, food processing, distribution and retailing, and its related industries provided almost 580,000 jobs, or about 16.6 percent of total statewide employment in 2000, the latest year for which detailed data are available. Nationally, farming and its related industries provide about 15.6 percent of all jobs. Farm and farm-related industries are identified by the U.S. Department of Agriculture as

“...those with 50 percent or more of their workforce employed in providing goods and services necessary to satisfy the final demand for agricultural products. These industries include farm production, processing and marketing of agricultural goods, and agricultural wholesale and retail trade.”

So, all of those workers are not exclusively involved in farming-related activities, but the number gives some idea of the broader affects of agriculture on the economy.

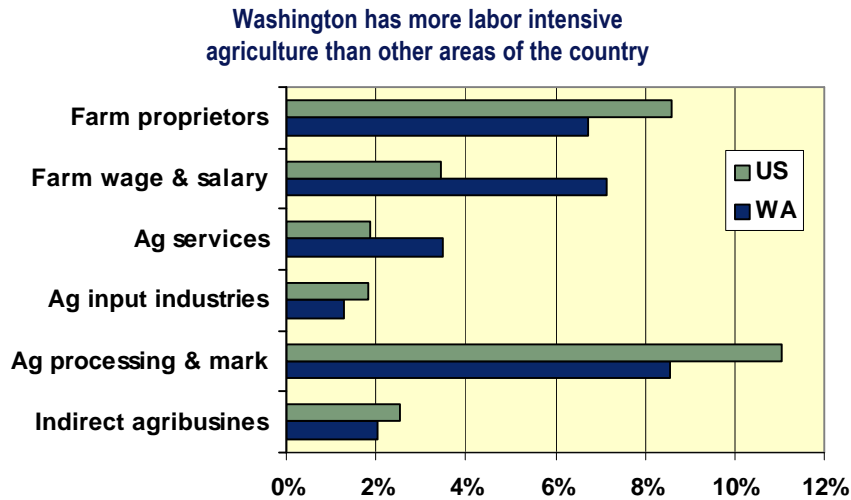
In contrast, Washington's covered employment in just agriculture (excluding forestry and logging activities) was around 71,050 in 2000 and had fallen to 69,900 in 2003. In 2000, then, covered agricultural employment accounted for about 12.3 percent of all employment in the state. If the same relative relationship held in 2003, then the 69,900 agricultural jobs would be related to about 570,700 total jobs both directly and indirectly related to agriculture in our state.

## Chapter 2 - Agricultural Employment

**Figure 5**

Percent Distribution of U.S. and Washington Farm and Farm-Related Employment, 2000

Source: Economic Research Service, U.S. Department of Agriculture



*“The state’s top agricultural product, in terms of gross receipts, is apples. . .”*

Compared to the nation as a whole, Washington has a relatively higher concentration of farm workers and agricultural service workers and fewer farm proprietors and agricultural processing and marketing employees. The state’s top agricultural product, in terms of gross receipts, is apples, which is quite a labor intensive crop relative to others. Apples account for 18.8 percent of all farm receipts in the state and account for 63.6 percent of all apple receipts in the nation. The top crop in the United States, by comparison, is cattle and calves.



**Figure 6**

Washington Agricultural Receipts, 2002

Source: Bureau of Economic Analysis

**Top five commodities account for two-thirds of the state’s agricultural receipts**

Commodity	Value of Receipts Thousand \$	Percent of State Total Farm Receipts	Percent of U.S. Value
1. Apples	977,508	18.8	63.6
2. Dairy products	671,040	12.9	3.3
3. Cattle and calves	614,385	11.8	1.6
4. Potatoes	478,166	9.2	15.8
5. Wheat	475,718	9.1	8.6

Although exact numbers of workers employed in apples versus cattle and calves are not available, a very general comparison indicates that about 10.5 times more receipts generated per job in apples than in cattle<sup>6</sup>.

<sup>5</sup> Note: agriculture wholesale and retail trade were excluded from this graph because of their relatively high numbers. In the U.S., agricultural wholesale and retail trade accounts for 70.7 percent of total farm and farm related jobs, while in Washington it accounts for almost the same percentage (70.8 percent).

<sup>6</sup> There were, on average, 1,100 covered jobs in cattle ranching and cattle feedlots in 2002. At the same time there were on average 18,700 covered jobs in apple orchards. Value of receipts per job in the respective industries can then be calculated and compared, \$52,300 in apples and \$551,000 in cattle.

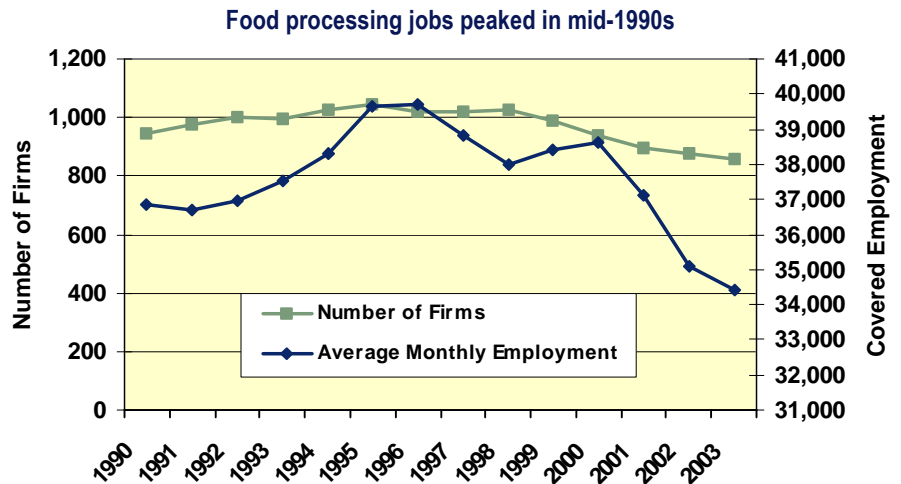
## Food Processing - Long-Term Trends

Food processing includes the processing of agricultural products produced both within and outside of the state. Much of food processing is done fairly close to the point of production such as much of seafood packaging, fruit and vegetable preserving, and dairy product manufacturing.

**Figure 7**

Food Processing Employment and Number of Firms in Washington 1990-2003

Source: LMEA – Employment Security Department



Since 1990, employment in food processing has declined rather dramatically. The greatest decline in employment came after 2000. The number of food processing firms has also been declining since the late 1990s. Part of this is consolidation of firms resulting from consolidation within the food industry.

### Recent Trends

**“The second largest sector within food processing, seafood product preparation and packaging, has also experienced declines since 2000.”**



Food processing can be broken down into general categories based on the North American Industry Classification System (NAICS). Fruit and vegetable preserving and specialty processing has been the largest employer since 1990. The table below shows the change in food processing employment and payroll by sector. Year-to-year changes can be somewhat skewed due to supply shocks, such as an unusually low catch of fish or a weak apple harvest. Still, it is useful to get a short-term measure of employment change.

The largest percent declines in employment came in grain and oilseed milling and sugar and confectionary product manufacturing, but it is without a question in fruit and vegetable preserving and specialty processing where the most significant level declines took place. This is the largest sector within food processing in the state, and employment has declined by 2,200 since 2000. The second largest sector within food processing, seafood product preparation and packaging, has also experienced significant declines since 2000 (-630).

## Chapter 2 - Agricultural Employment

**Figure 8**

Payroll Dollars are Inflation Adjusted

Covered Employment, 2000-2003, 4<sup>th</sup> Quarter of 2003 Preliminary

Source: LMEA – Employment Security Department

### Grain has seen largest declines in employment and payroll since 2000

Commodity	Covered Employment 2003	Change in Employment 2000 - 2003	Change in Payroll 2000 - 2003
Fruit and vegetable preserving	10,962	-16.90%	-5.30%
Seafood product prep. and packaging	6,447	-8.90%	5.40%
Animal slaughtering and processing	5,749	7.80%	11.70%
Bakeries and tortilla manufacturing	5,262	-14.10%	-2.60%
Other food manufacturing	2,513	-9.20%	-1.30%
Dairy product manufacturing	1,535	-4.80%	-1.30%
Sugar and confectionery product mfg.	747	-22.30%	-30.40%
Animal food manufacturing	662	-2.10%	0.00%
Grain and oilseed milling	554	-36.40%	-33.00%

Employment declines tend to have two main causes, one is a decline in the industry either due to less demand or a shift in location to another geographic area (either domestic or foreign), and the other is an increase in productivity. We don't have a direct measure of productivity for the state, but can look at changes in total payroll over the same period. If payroll increases while employment declines, this could be a sign of a healthy industry, but with strong productivity gains. Between 2000 and 2003, only seafood product preparation and packaging falls into this category with payroll increasing by 5.4 percent while employment declined.

Disentangling long-term trends in food processing employment from the effects of the recent recession is also difficult. Total covered employment declined by 1.6 percent from 2000 and 2003 and the total real value of payroll for covered employment declined by 4.1 percent. Most food processing sectors, thus, did worse than the state average in terms of employment decline, but some did better in terms of payroll. A couple of industries have a strong influence, however, on the aggregate numbers. Excluding manufacturing, covered employment increased over the period by 0.9 percent and, excluding the information sector, the real value of payroll only declined by 0.3 percent.

### Geographic Breakdown

Over 81 percent of agricultural employment is in rural eastern Washington. In contrast to general agriculture, most food processing is located in the urban western portion of the state. The rural eastern part of the state has the next largest portion of food processing employment.

***“If payroll increases while employment declines, this could be a sign of a health industry, but with strong productivity gains.”***



## Chapter 2 - Agricultural Employment

**Figure 9**

Covered Employment, 2003, 4<sup>th</sup> Quarter of 2003, Preliminary  
 Source: LMEA – Employment Security Department

**Food processing jobs are located in the urban western portion of the state**

Location	Distribution of Total Statewide Food Processing Employment	Distribution of Total Covered Employment	Distribution of Agricultural Employment
Rural East	36.9%	14.7%	81.1%
Rural West	12.0%	1.2%	7.3%
Urban East	3.8%	7.6%	0.6%
Urban West	47.2%	76.5%	11.0%

The annual average covered wage differs quite a bit between areas as well. Wages go from a high of \$40,300 in the urban west to a low of \$23,300 in the rural west. There is less difference between the rural and urban east with wages of \$28,300 and \$30,600 respectively.



**“Bakeries, other food manufacturing, dairies, sugar and confectionary, and grain and oilseed milling are found predominantly in the western urban part of the state.”**

Some of the variation may be due to the type of food processing. Western urban areas are where seafood processing is located (74 percent of the statewide total) and this sub-sector pays an average annual wage of \$55,600 in that area. Bakeries, other food manufacturing, dairies, sugar and confectionary, and grain and oilseed milling are all found predominantly in the western urban part of the state. The eastern rural part of the state has, on the other hand, 81 percent of fruit and vegetable preserving, which pays an average annual wage of \$28,500 in that area.

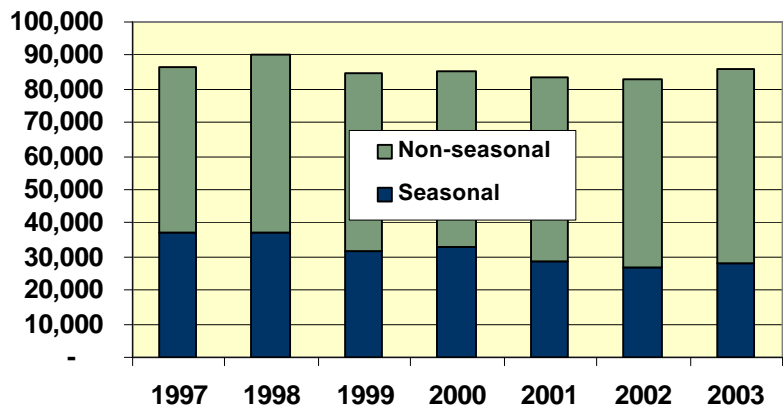
### Seasonal Agriculture Employment

Much of Washington’s agriculture is dependent upon seasonal labor. Washington’s collected data on seasonal agricultural workers is available from the *In-Season Farm Labor Survey* thanks to the more than 600 growers who participate each month. Since 1997, seasonal labor has become somewhat less important to Washington agriculture in comparison to non-seasonal labor. While total agricultural labor has changed very little since 1997, seasonal labor has decreased by 24.5 percent and non-seasonal has increased by 17.8 percent.

**Figure 10**

Total Non-seasonal and Seasonal Agricultural Workers in Washington, 1997-2003  
 Adjusted for Dual Job Holders and Non-covered Employees  
 Source: LMEA – Employment Security Department

**Non-seasonal jobs have been growing as a share of agricultural employment**





## Chapter 2 - Agricultural Employment

Over the past four years, the pattern of seasonal agricultural employment has changed somewhat as seen in *Figure 11*. The first peak in July has remained fairly constant, but the trough in August is lower and the second peak in October has also declined.

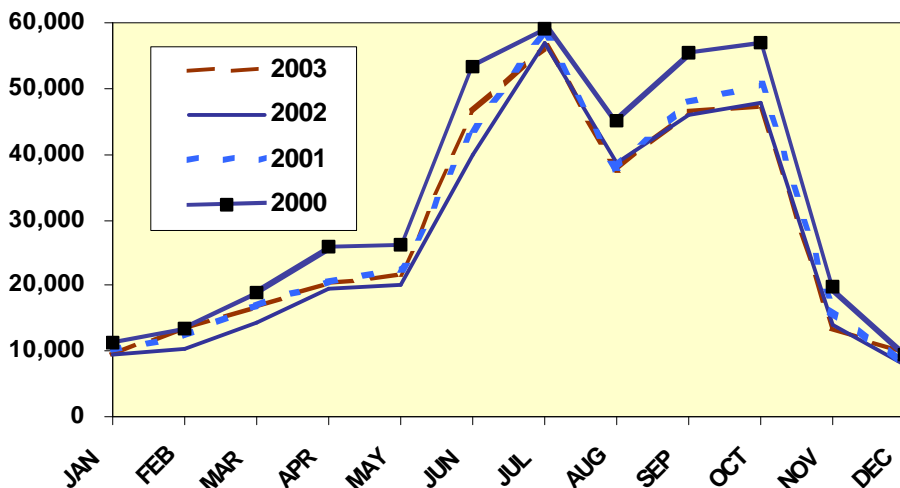
**Figure 11**

Seasonal Agricultural Employment

Washington, Monthly 2000-2003

Source: LMEA – Employment Security Department

**The twin peaks of seasonal agricultural work: July and October**



Besides the downward shift from 2000 to 2001, 2002, and 2003 in July, August, and September, the seasonal pattern between the four years has remained fairly stable. Factors that could affect the seasonal pattern of labor include commodity prices, weather, availability of workers, shifts between crops, and mechanization. As will be discussed below, a reduction in employment of workers during the apple harvest seems to be responsible for the above shift. As the shift has occurred over a number of years, it is most likely due to mechanization or a change in the availability of workers. Recall in *Figure 10* that the number of permanent agricultural workers has risen relative to the number of seasonal workers. There is no breakdown of permanent workers by crop so it is impossible for us to tell if they are being employed in the apple harvest in the place of seasonal workers.

### Fruit

#### Apples

Seasonal jobs in apple production were up, on average, in 2003 after hitting low levels in 2001 and 2002: 13,360 in 2003 compared to 13,100 and 12,500 in 2002 and 2001, respectively. Recall that non-seasonal workers have increased relative to seasonal workers, so it is impossible to know the relationship between total production and labor. Still, according to *Figure 12*, yield per acre has not increased over the past three years as the number of seasonal workers has declined. Rather, output seems to be declining along with the number of seasonal workers indicating an overall decline in the apple industry in the state relative to the late 1990s.

**“Changes in seasonal employment in apples have had an impact on total seasonal employment in the state.”**



## Chapter 2 - Agricultural Employment



**“Price per ton** is an indication of the level of demand, relative to supply for apples.”

It is still hard to tell if this is a seasonal, cyclical, or structural decline. A seasonal decline would be based on weather patterns. Since the decline has lasted three years, it is unlikely to be solely weather related. A cyclical decline would be related to the national and state recession. Often agriculture is on a different cycle than the rest of the economy. Price per ton is an indication of the level of demand, relative to supply for apples. The price quoted in *Figure 12*, adjusted for inflation, actually rose slightly in 2001 and 2002 after reaching a low in 2000. This is an indication that the apple market was not cyclically depressed in 2001 and 2002.

**Figure 12**

Seasonal Farm Worker Survey; Production, Yield, Value, and Average Price from Washington Agricultural Statistics Service

Source: *Seasonal Labor from LMEA – Employment Security Department*

### Seasonal employment and production in apples down since 2000

	Average Monthly Seasonal Labor	Production (Thousands)	Yield Per Acre	Value Per Bearing Acre	Average Price (\$/Ton)
1996	17,255	2,750	16.75	5,565	332
1997	17,371	2,500	14.7	4,832	328
1998	19,350	3,050	19.2	4,070	230
1999	14,434	2,500	14.55	4,977	342
2000	16,352	3,000	17.65	4,413	250
2001	12,455	2,525	15.05	5,359	356
2002	13,073	2,575	15.7	6,238	402
2003	13,358	2,250		6,316	454

There is not enough data yet to identify a clear structural decline in apple production in Washington. As reported by the Washington Agricultural Statistical Service,

“Washington’s 2003 [apple harvest] will make up 51 percent of the U.S. production, compared with 60 percent in 2002 and 54 percent in 2001. Growers reported spotty bloom and lower production in some of the new varieties due to the alternate bearing cycle. Some scattered frost and hail damage were reported.”

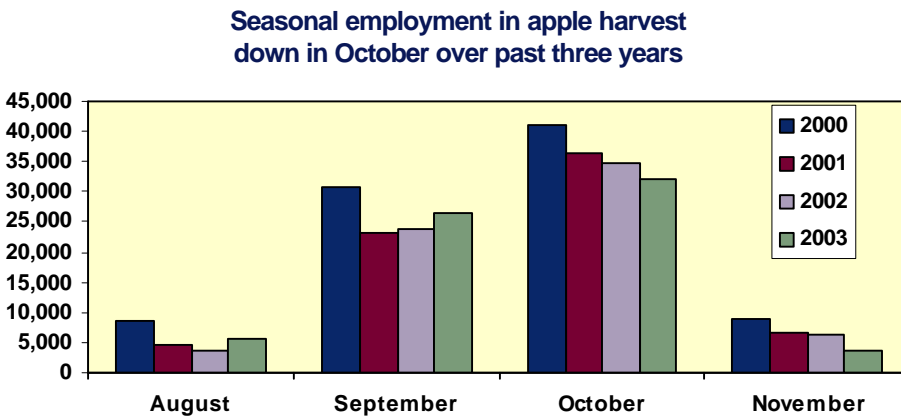
So, Washington’s smaller apple crop in 2003 was due to some temporary changes. Market share was lost in part to higher than expected production in other parts of the country. While a structural decline may not yet be evident, there is certainly structural stagnation with little growth in employment or production over the past eight years.

Changes in seasonal employment in apples have had an impact on total seasonal employment in the state. The peak in seasonal employment that comes in October is associated with the apple harvest. *Figure 13* shows seasonal employment in the apple harvest for peak months from 2000 to 2003. The decline in employment from year to year over the months of October and November is evident. There seems to have been a shift to an earlier harvest as September has a slightly increased workforce from 2001 to 2003.

## Chapter 2 - Agricultural Employment

**Figure 13**

Seasonal Employment Estimates for Apple Harvest, 2000-2003  
Source: LMEA – Employment Security Department



Changes in seasonal employment needs may also be driven by an increase in the varieties of apples that are grown. In the 1980s most supermarkets carried three or four varieties of apples: Red Delicious, Golden Delicious, Granny Smith, and maybe McIntosh or a local variety. Now, supermarkets often offer upwards of ten different varieties<sup>7</sup>. The newer varieties inevitably attract away some of the consumers of the more traditional varieties. This has put pressure on growers to increase variety. Since there is a considerable lag and investment required to plant a new orchard and take existing orchards out of production, farmers of traditional varieties will experience a difficult transition period.

### Cherries

Cherries are one of the bright spots in Washington fruit production. Although cherries are very subject to weather conditions and are a somewhat fragile fruit for shipping, they are becoming more popular as shipping methods improve. Since the early 1990s the trend in cherry production has clearly been on the increase. In 2002 Washington State was the top national producer of both sweet and tart cherries (Michigan is usually the lead producer of tart cherries, but had a devastating frost). In 2003, output reached an all-time high. The Northwest Cherry Growers Announced that

“The northwest cherry industry has experienced a weather pattern for the entire season like no other in recent memory—virtually no precipitation, only light winds, and just the right amount of hot days and cool nights that produced a crop peaking on large sizes.”

*“In 2003, output reached an all-time high.”*



<sup>7</sup> Selected articles from World Apple Report; Belrose Inc, <http://www.e-belrose.com/index.html>.

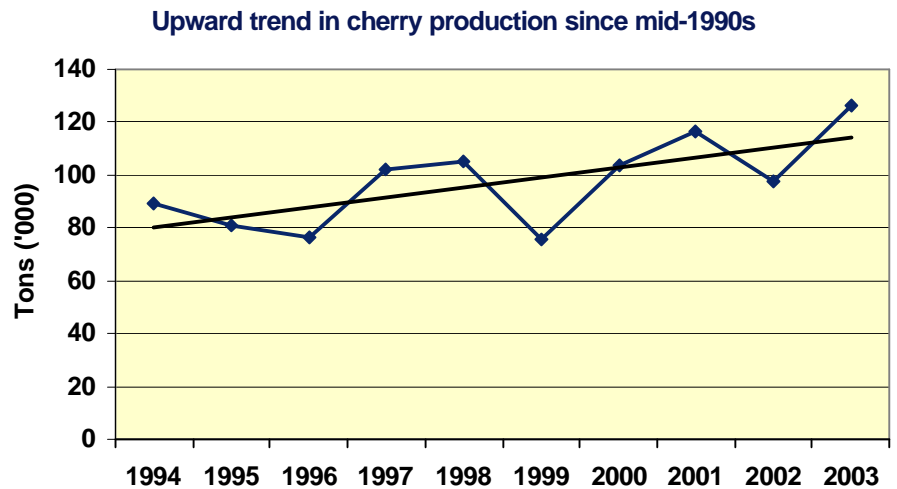


“... **Let consumers know** that the northwest cherry season continues to expand, and is running from mid-June through August.”

**Figure 14**

Annual Average, Seasonal Employment Estimates for all Cherry-Related Agricultural Activities, 1994-2003

Source: LMEA – Employment Security Department



B.J. Thurlby, President of the Washington State Fruit Commission, predicts that “Over the last few years, the crops have been increasing in size to a point that 2004 production should be in line with what the market is anticipating. It is also important to let consumers know that the northwest cherry season continues to expand, and is now running from mid-June through August.” Sweet cherries require a very specific micro climate of sunny days, cool nights, and rich soil. Only a few states have such a climate (Washington, Oregon, Utah, and Idaho) so the supply of cherries remains constrained, maintaining price.

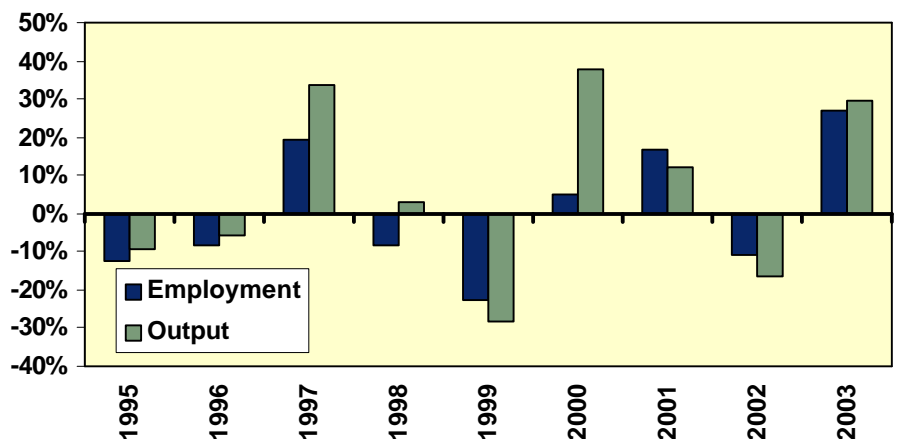
In cherry production, seasonal employment has moved closely with output. *Figure 15* shows the percent change in seasonal employment against the percent change in output.

**Figure 15**

Annual Percent Change in Seasonal Employment and Output in Cherries, 1995-2003

Source: LMEA – Employment Security Department and the Washington Agricultural Statistical Service

**Employment and output changes are very closely correlated in cherries**



## Chapter 2 - Agricultural Employment

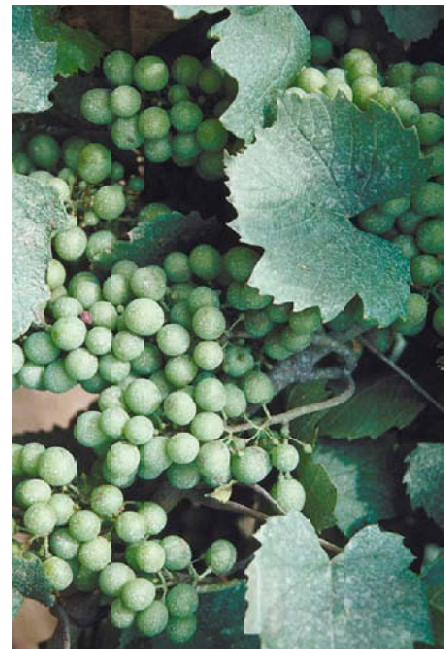
Although in a few years, like 1997 and 2000, output increased by a much larger percentage than seasonal employment—generally the correlation is quite close. There is little indication of any trend towards non-seasonal employment or changes in employment due to changes in varieties or productivity.

### Grapes

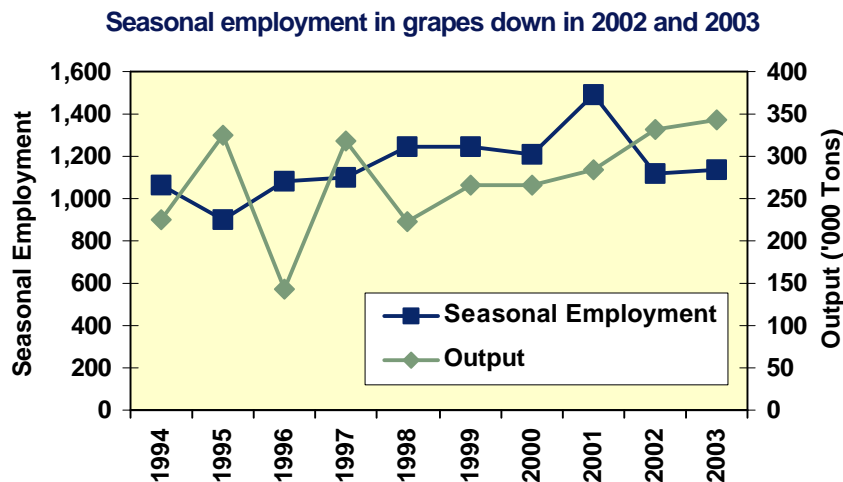
The wine industry continues to grow rapidly in Washington, however, Washington's 2003 wine grape production was down three percent from 2002. Of the total wine grapes produced, 54 percent were white and 46 were red. Chardonnay grapes dominated output with 28 percent of all wine grape output in 2003 (down from 33 percent in 1999). All of the other major varieties are down as a share of the total except for Cabernet Sauvignon grapes, which were up to 16.7 percent in 2003, from 12 percent in 1999 and Syrah up to 5.6 percent in 2003, from 1.1 percent in the year 1999.

**Figure 16**

Seasonal Employment and Output in Grapes, 1994-2003  
 Source: LMEA – Employment Security Department and the Washington Agricultural Statistical Service

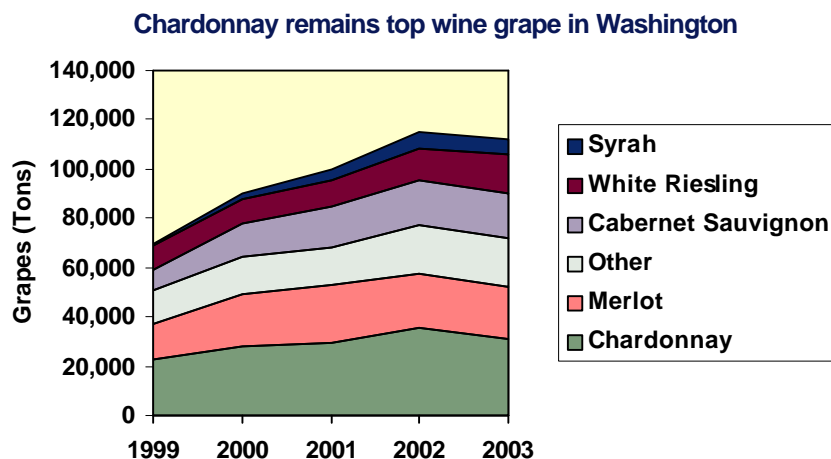


**“The wine industry** continues to grow rapidly in Washington, however, Washington's 2003 wine grape production was down three percent from 2002.”



**Figure 17**

Annual Output of Grapes, 1999-2003  
 Source: Washington Agricultural Statistics Service



## Chapter 2 - Agricultural Employment

Washington not only produces wine grapes, but produces wine as well. Washington's wine industry is growing rapidly and grape production increases to supply the growing winery demand. There has been some remarkable increases in employment in wineries since 1990. For example, Walla Walla County saw an increase of 1,657 percent. This huge increase, though, was mostly the result of a very small initial employment.

### Figure 18

Walla Walla has seen tremendous growth in wineries over the past 13 years.

Employment and Payroll in Wineries

Washington 1990 and 2003, 4<sup>th</sup> Quarter of 2003 Preliminary

Source: LMEA – Employment Security Department

#### Counties with over 100 winery workers in 2003

Location	Employment 1990	Employment 2003	Winery Payroll 2003	Change in Employment 1990-2003
Benton and Franklin	85	320	\$9,320,281	277%
Walla Walla	13	223	\$4,954,575	1657%
King	212	182	\$6,450,779	-14%
Yakima	117	178	\$3,209,692	52%

Most winery employment is located in the I-82 corridor from Yakima to the Tri-Cities and Walla Walla and, as mentioned above, this is where most of the growth is occurring.

Washington is the top producer of non-wine grapes as well. Washington produced 212,000 tons of Concord grapes in 2003, up from 6.5 percent from 2002 and up 27 percent from 2001. In 2003, Washington was the top producer of Concord grapes, producing 52 percent of the nation's production. Washington was the second largest producer of Niagara grapes in 2003 after Michigan. Michigan has increased its production of Niagara grapes significantly over the past three years from 7,000 in 2001 to 13,900 in 2002 to 27,000 tons in 2003.

“**Asparagus** production in Washington was down to 608,000 cwt.”



### Asparagus

Asparagus production in Washington was down to 608,000 cwt. (hundredweight) in 2003, a drop of 3.3 percent from 2002 and 11.1 percent from 2001. This drop in production was in line with a steady drop in the number of acres harvested; 19,000 in 2001, 17,000 in 2002, and 16,000 in 2003. Farmers have pulled the least productive acres out of cultivation causing yield per acre to increase from 36 cwt. per acre in 2001 to 38 cwt. per acre in 2003. This is a continuation of a longer term trend. Since 1989, asparagus production has fallen more than 59 percent in the state.

## Chapter 2 - Agricultural Employment

**Figure 19**

Asparagus Acreage, Production, and Value of Receipts

Source: Economic Research Service, U.S. Department of Agriculture

### Asparagus production falls in Washington and the nation

State	Area Harvested (Acres)		Production (1000 Cwt.)		Value (\$1,000)	
	2002	2003	2002	2003	2002	2003
California	34,000	23,000	1,020	863	116,280	104,423
Michigan	15,000	15,000	219	317	11,703	19,971
<b>Washington</b>	<b>17,000</b>	<b>16,000</b>	<b>629</b>	<b>608</b>	<b>44,893</b>	<b>43,277</b>
United States	66,000	54,000	1,868	1,788	172,876	167,671

This pattern in Washington of decreasing production was also seen in the largest asparagus-producing state in the country, California. California was responsible for about 48 percent of all domestic asparagus production in 2003, down from 54 percent in 2002. In California, the number of acres harvested was down 32 percent from 2002 and total production was down over 15 percent. Michigan, California, and Washington account for all the domestic asparagus production. Michigan was the smallest producer in both 2002 and 2003, but was the only state to increase production. According to industry research, production is expected to continue to decline at a rate of five to ten percent a year<sup>8</sup>.

**“Michigan, California, and Washington State account for all the domestic asparagus production.”**



**Figure 20**

Asparagus Production, Imports, and Use Per Capita

Source: Economic Research Service, U.S. Department of Agriculture

### Asparagus imports rise and domestic demand remains constant

Year	Production (Million Pounds)	Imports (Million Pounds)	Use Per Capital (Pounds)
2001	137.2	157.0	0.92
2002	126.7	180.3	0.97
2003	125.0	185.0	0.96

Nationally, domestic production has declined by 9 percent while imports have increased by 18 percent. Domestic per capita consumption of asparagus has remained fairly constant at just under a pound per person a year. Imports have been trending higher over time accounting for 66 percent of domestic use in 2003, up from 60 percent in 2000. The U.S. imports of asparagus come principally from Peru, Chile, Mexico, and China and exports go to Japan and Canada. Imports peak during February and March and again in October with 40 percent of all imports arriving during those months. Imports remain lowest in the spring when domestic production peaks.

<sup>8</sup> Yakima Herald-Republic, May 2, 2004.



**“Over the past five years, the number of establishments in Washington involved in cattle ranching has declined steadily.”**

## Cattle and Dairy

### Cattle

The discovery of BSE (bovine spongiform encephalopathy) on December 23, 2003 in Yakima County sent shock waves through the U.S. cattle market. Cattle prices dropped and major markets for U.S. beef, including Japan, South Korea, and Mexico, banned imports. Prices recovered quickly however due to strong domestic demand.

**Figure 21**

Cattle Production in Washington State, 2003

### Cattle production in Washington down slightly in 2003

Year	Output (1,000 Head)	Establishments	Annual Average Covered Employment
1999	856.5	339	1,083
2000	904.4	317	1,133
2001	877.3	306	1,197
2002	852.5	287	1,115
2003	797.3	266	1,088

Over the past five years, the number of establishments in Washington involved in cattle ranching has declined steadily. Employment, though, has varied somewhat indicating that remaining farms may be getting larger. Output reached a local peak in 2000 at 904,400 head and has declined since that time. Washington only accounts for about 1.2 percent of the total inventory of cattle in the United States and, thus, any change in output here is unlikely to affect domestic or foreign prices.

### Dairy

The number of dairies in Washington has declined since 1993 by 29 percent. Covered employment in dairies, though, has increased reaching a high of 3,476 in 2002. The average employment in dairies is quite small.

**Figure 22**

Number of Dairy Establishments and Covered Employment in Dairies

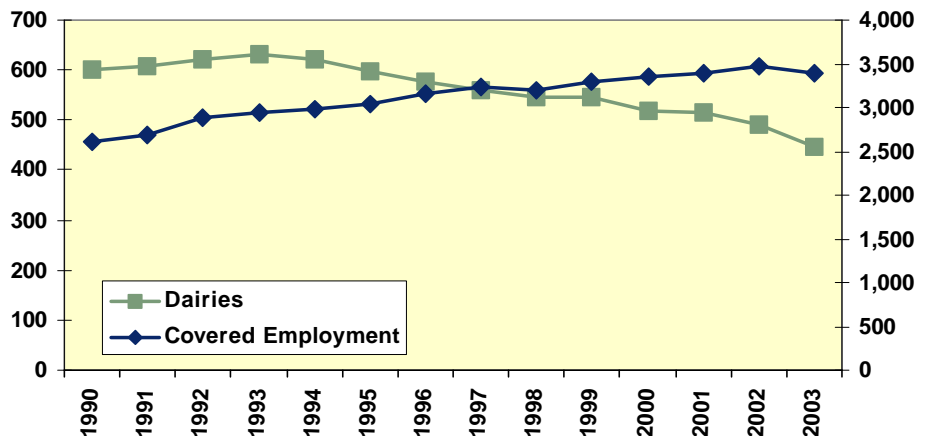
1990 through 2003, 4<sup>th</sup> Quarter 2003 Preliminary

Source: LMEA - Employment Security Department

**“The number of dairies has declined since 1993 by 29 percent.”**



### Number of dairies declines since early 1990s





## Chapter 2 - Agricultural Employment

The decline in the number of dairies has occurred in most areas of the state. Only in North Central, the Olympic Workforce Development Area, and the Tri-County Workforce Development Area did the number of dairies increase and there only by a small number. Covered employment increased in all three of these areas but only by two in the Olympic Consortium. Employment also increased in the Northwest Workforce Development Area even though the number of dairies declined quite dramatically. Employment in dairies also decreased significantly in Snohomish and King counties.

**Figure 23**

Number of Dairy Farms, Washington State, 1999-2003

### The number of dairy farms declines in most areas of the state

Workforce Development Area (WDA)	Change in Number of Dairy Farms 1999 - 2003	Change in Dairy Employment 1999 - 2003
WDA 1 Olympic Consortium	2	2
WDA 2 Pacific Mountain	-23	20
WDA 3 Northwest	-61	167
WDA 4 Snohomish County	-25	-104
WDA 5 Seattle-King County	-11	-101
WDA 6 Pierce County	-8	-14
WDA 7 Southwest Washington	-20	-5
WDA 8 North Central WA/Columbia Basin	5	140
WDA 9 Tri-County	3	688
WDA 10 Eastern Washington	-6	-33
WDA 11 Benton-Franklin	-3	16
WDA 12 Spokane	-7	7
<sup>9</sup> /Counties by WDA		

The number of milk cows in Washington State remained fairly constant at 247,000 between 1999 and 2002. The number fell to 245,000 in 2003. Milk produced per cow rose in 2003 to 22,780 pounds. Gross producer income, though, is down significantly (-18.3 percent) from 2001.

### Other Agricultural Products

Washington is also a top producer of many other agricultural products including potatoes, hops, onions, wheat, and berries. These will not be discussed in detail in this report, but information on agricultural employment is available through the Labor Market and Economic Analysis branch of the Employment Security Department and information on production, acreage, and prices is available through the Washington Agricultural Statistics Service.

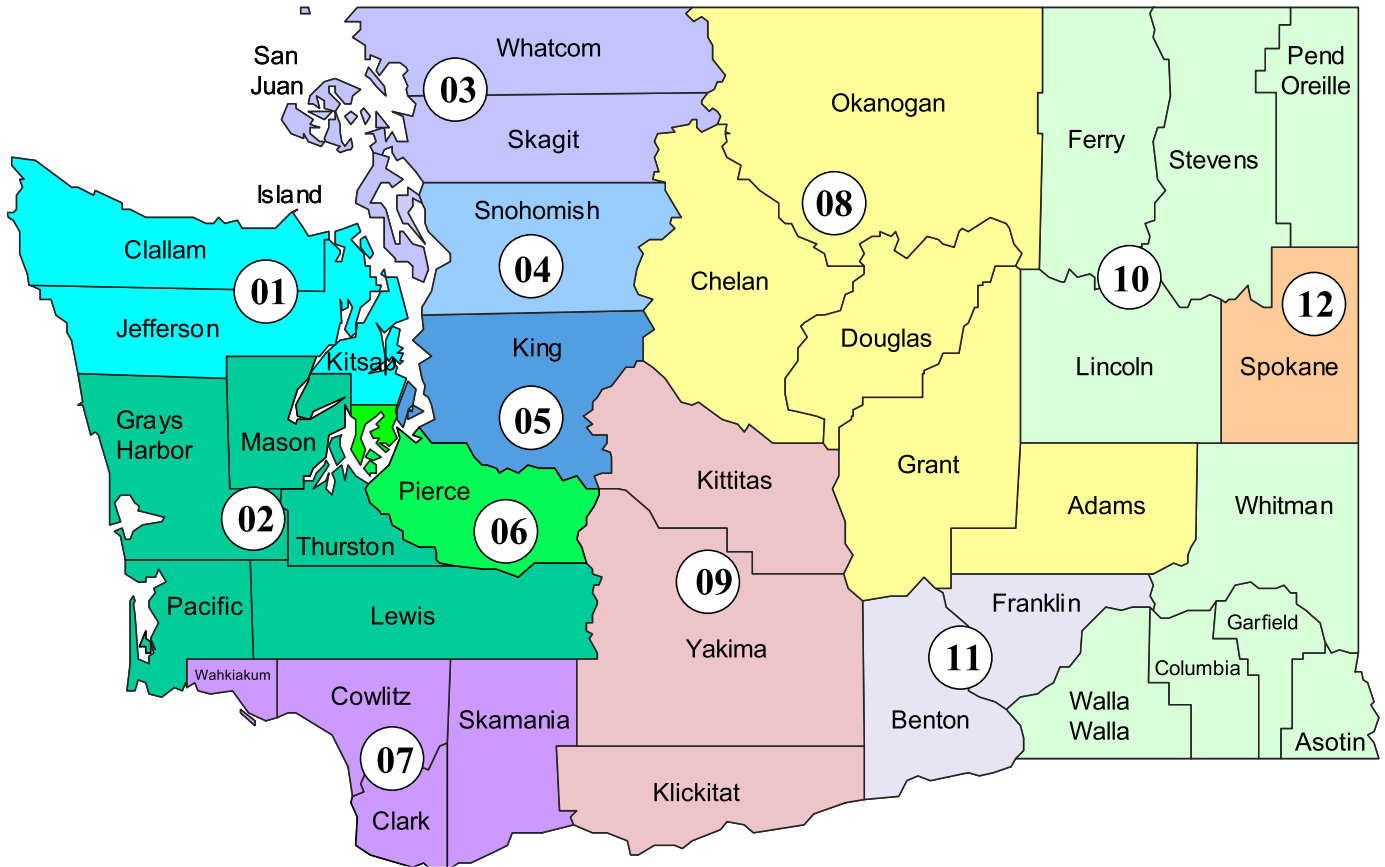


**“The number of milk cows in the state remained fairly constant at 247,000 between 1999 and 2002.”**

<sup>9</sup> The Olympic Consortium includes Clallam, Jefferson, and Kitsap counties, Pacific Mountain – Thurston, Lewis, Mason, Grays Harbor, and Pacific. Southwest – Clark, Cowlitz, Wahkiakum, and Skamania. Northwest – Whatcom, Skagit, San Jaun, and Island. North Central WA/Columbia Basin – Chelan, Douglas, Okanogan, Grant, and Adams. Tri-County – Klickitat, Kittitas, and Yakima. Eastern – Ferry, Stevens, Pend Oreille, Lincoln, Garfield, Walla Walla, Columbia, Asotin, and Whitman.

Figure 24

## WORKFORCE DEVELOPMENT AREAS



- 01** - Olympic Consortium
- 02** - Pacific Mountain
- 03** - Northwest Washington
- 04** - Snohomish County
- 05** - Seattle-King County
- 06** - Pierce County
- 07** - Southwest Washington
- 08** - North Central Washington/Columbia Basin
- 09** - Tri-County
- 10** - Eastern Washington Partnership
- 11** - Benton-Franklin
- 12** - Spokane

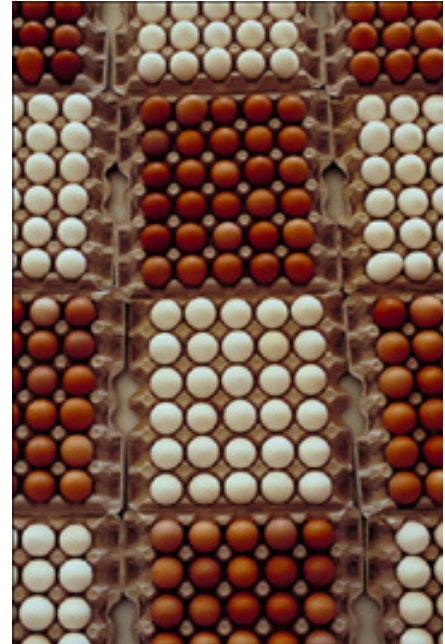
# Chapter 3 - Hours and Earnings

## COVERED EMPLOYMENT AND PAYROLL

Identifying the sub-sector of agriculture that is the most important to the state seems straight forward. In *Figure 25* below, agricultural sectors are sorted by covered employment. Fruit and tree nut farming has the most covered jobs in the state, 48.7 percent of all agricultural employment. This sector also has the largest number of firms, 42.7 percent of all agricultural firms. Fruit and nut tree farming is also closely related to the next two largest sectors, support activities for crops and other crop farming. All together, these three industries account for almost three-quarters of covered agricultural employment in the state.

By the standard of average annual pay, though, animal aquaculture and poultry and egg production pay the most on average per job. (This is not per employee, because one employee could work multiple times in seasonal employment and would be counted separately each time. For pay per employee, see section below on *worker earnings*.) In fact, fruit and tree nut farming has by far the lowest average annual pay. This does not mean, necessarily, that the hourly wage is less in this industry, only that it is very seasonal so employees only work temporarily. Still, because of its high employment, fruit and tree nut farming has the highest overall payroll.

**Figure 25**  
Covered Employment and Payroll 2003, 4<sup>th</sup> Quarter 2003, Preliminary  
Washington State  
Source: LMEA – Employment Security Department



**“By the standard of average annual pay, animal aquaculture and poultry and egg production pay the most on average per job. . .”**

### Fruit and tree nut farming is leading Washington agricultural industry

Industry	Firms in 2003	Covered Employment 2003	Average Annual Pay Per Job
Fruit and tree nut farming	3,092	34,027	\$12,998
Support activities for crops	319	11,604	\$19,076
Other crop farming	714	6,259	\$20,365
Greenhouse and nursery	376	5,057	\$20,050
Vegetable and melon farming	391	4,499	\$19,256
Cattle ranching and farming	712	4,472	\$22,771
Oilseed and grain farming	1,237	1,964	\$17,951
Poultry and egg production	51	630	\$24,426
Support activities, animal production	164	517	\$19,979
Animal aquaculture	53	497	\$24,672
Other animal production	131	363	\$19,535

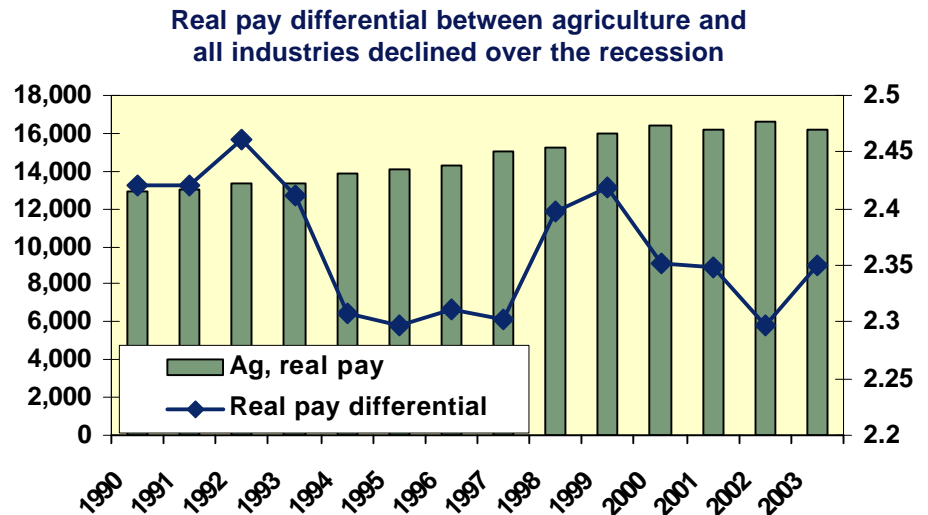
Almost all industries have seen a decline in the *number of firms* since 1990. Only animal aquaculture and support activities for crops and animals increased. *Employment*, though, increased in many industries indicating that the average size of agricultural firms increased over the period. There were large employment declines, however, in many of the state’s major crop sectors including oilseed and grain farming, vegetable and melon farming, and fruit and tree nut farming.

**Figure 26**

Real Average Annual Pay Per Job in Agriculture and Real Wage Differential. The real wage differential is calculated as the real annual average pay in all industries divided by the real average annual pay in agriculture. This ratio averaged 2.36 between 1990 and 2003.

Washington State, 1990-2003

Source: LMEA – Employment Security Department



Over the past thirteen years, real pay per job in agriculture had one period of growth from 1997 through 2000 when real pay grew 14.8 percent. Interestingly, during this time, the pay differential increased as well. Real wages increased across all industries by 16.9 percent. The effect of the recession is apparent in both agriculture and all industries, but the effect was more extreme in industries other than agriculture, hence the real pay differential declined.

### WORKER EARNINGS



**“At the national level,** median weekly earnings for hired farm workers was 57 percent of that for all other wage and salary workers.”

At the national level, median weekly earnings for hired farm workers was 57 percent of that for all other wage and salary workers. This gap has widened since 1996 when hired farm workers earned about 60 percent that of other workers. This is particularly true for those making the least (many of whom work part time). In 2002, over 45 percent of hired farm workers earned less than \$300 per week compared with 22 percent for all wage and salary workers.

Those farm workers who had farm work as the primary job had lower family income in 2002 than did all wage and salary workers. About 60 percent of the hired farm workers had family income less than \$30,000 compared to 33 percent of all workers.

Given low earnings in agriculture, it is not surprising that many agricultural workers supplement their earnings with employment in a nonagricultural industry. The Employment Security Department records only include those employees who worked for a firm covered for unemployment insurance in Washington. Many of the agricultural workers who only worked in agriculture are migrants and move from state to state with the harvest. Only their income earned in Washington is recorded here.

## Chapter 3 - Hours and Earnings

**Figure 27**

Percent of Workers Earning an Average Annual Wage Over \$10,000

**Agriculture workers earn more on an annual basis if they also work for a nonagricultural industry**

Industry	Percent of Workers Earning an Average Annual Wage over \$10,000
Agriculture <b>or</b> agriculture and another industry	33.80%
Agriculture <b>only</b>	29.10%
Agriculture <b>and</b> another industry	46.60%



**“Less than a third of workers who work any time in agriculture over the year earned more than \$10,000 in 2003.”**

Less than a third of workers who work any time in agriculture over the year earned more than \$10,000 in 2003. Workers who earn less than \$10,000 a year in covered employment would not be expected to be able to support themselves. The majority of agricultural workers are, thus, likely to gain other income out of state, work in non-covered employment, or share living expenses with another earner.

Low earnings are both a result of low hourly wages and of few hours worked. In 2003, those who worked in agriculture only worked on average 803 hours, while those who also found work in a nonagricultural industry worked on average 1,195. By far, most of the workers who work in agriculture in Washington, only work in agriculture—69 percent.

**Figure 28**

Workers in Agricultural and in Nonagricultural Industries

Agriculture Subsector	Number of Employees			Average Annual Earnings of Employees			Average Annual Hours of Employees		
Agriculture subsector	148,547	45,817	102,730	\$9,948	\$13,510	\$8,359	924	1,195	803
Fruit and nut tree	79,668	22,732	56,936	\$8,097	\$12,866	\$6,193	800	1,167	654
Support for crop	24,870	8,450	16,420	\$10,745	\$12,457	\$9,864	1,003	1,160	923
Other crop	11,918	3,502	8,416	\$11,222	\$14,512	\$9,853	1,044	1,256	955
Greenhouse, nursery and floriculture	9,790	3,625	6,165	\$13,052	\$13,346	\$12,879	1,156	1,223	1,116
Vegetable and melon	9,181	3,077	6,104	\$10,967	\$13,599	\$9,641	978	1,213	859
Cattle	5,622	1,414	4,208	\$17,573	\$18,806	\$17,159	1,460	1,504	1,445
Oilseed and grain	4,575	1,882	2,693	\$13,202	\$19,285	\$8,951	963	1,247	764
Support for animal	938	361	577	\$14,533	\$15,043	\$14,214	1,003	1,112	934
Animal aquaculture	705	286	419	\$16,737	\$15,490	\$17,588	1,104	1,187	1,047
Other animal	655	229	426	\$14,260	\$16,876	\$12,854	1,077	1,251	981
Poultry and egg	603	252	351	\$14,752	\$13,859	\$15,393	1,283	1,299	1,272

Workers employed in both agriculture and nonagriculture and agriculture only

Agriculture and nonagriculture industry










Only in agriculture




## Chapter 3 - Hours and Earnings

Hours of work varied widely between agricultural sub-sectors. No industry has average hours near full employment, around 2000 hours, because there are part-time and temporary workers in every industry. Still, agriculture is an industry with unusually low average hours because of the seasonal nature of the work. Hours were lowest in fruit and nut tree farming and in vegetable and melon farming. Hours were highest in cattle and in poultry and egg farms. In comparing the highest to the lowest, cattle farm workers worked about 89 percent more hours than did fruit and nut tree farm workers on average.

The highest paid workers were in animal aquaculture, but there were relatively few of these workers, only 419 who worked only in agriculture. Next was cattle farming and then poultry and egg farms. Hours worked is more important in determining average annual earnings than is hourly wage. This is quite common in industries where many workers are part time or temporary.

**Figure 29**  
Workers by Size of Firm

Firm Size	Number of Employees			Average Annual Earnings of Employees			Average Annual Hours of Employees		
									
Total	147,716	45,414	102,302	\$9,963	\$13,526	\$8,381	925	1,195	805
One	2,309	655	1,654	\$11,907	\$14,960	\$10,698	1,004	1,202	925
1 to 5	11,529	3,447	8,082	\$11,023	\$14,521	\$9,531	966	1,221	856
6 to 10	12,351	3,709	8,642	\$10,772	\$14,335	\$9,243	965	1,247	844
11 to 20	17,046	5,043	12,003	\$10,086	\$13,425	\$8,683	931	1,215	811
21 to 50	27,239	7,928	19,311	\$8,937	\$13,093	\$7,230	848	1,192	707
51-100	21,410	6,272	15,138	\$9,350	\$13,406	\$7,669	904	1,237	765

-  Workers employed in both agriculture and nonagriculture and agriculture only
-  Agriculture and nonagriculture industry
-  Only in agriculture

Earnings do not vary widely by average size of firm. In agriculture, workers tend to make less when they work for large firms. This is not the norm in other industries where large firms tend to offer higher wages, better benefits, and more stability than small firms. Temporary workers tend to have less of a relationship with their employers than do permanent workers. Small firms may establish more of a relationship with their few workers or the type of work on small farms may pay more. Both the number of hours is higher on small farms as is the average hourly wage.

## Chapter 3 - Hours and Earnings

### Personal Income

Earnings in all industries are made up of both wage and salary disbursement paid to hired labor and also profits made by the owners of firms. The Bureau of Economic Analysis keeps records on income earned in the farm sector. The table below looks at earnings in Washington in 2002—the latest year for which data are available, and compares the change from 2000 to 2002 for both Washington and the United States.

**Figure 30**

Farm Income and Expenses, Thousands of Dollars  
Washington and the United States, 2000 and 2002

Source: Bureau of Economic Analysis

#### Washington sees stagnation in farm income and still outpaces the nation

Title	Washington		United States
	2002	Change 2000-2002	Change 2000-2002
<b>Total cash receipts from marketing (\$000)</b>	<b>\$5,344,167</b>	<b>0.6%</b>	<b>-0.7%</b>
Total livestock and products	\$1,627,654	-13.4%	-6.2%
Meat animals and other livestock	\$813,995	-19.9%	-8.9%
Dairy products	\$671,040	-5.6%	-0.3%
Total crops	\$3,716,513	8.2%	5.7%
Total grains	\$583,033	6.9%	10.1%
Hay, silage, etc	\$305,203	12.4%	13.6%
Vegetables	\$326,716	-1.7%	3.8%
<b>Fruits and nuts</b>	<b>\$1,472,814</b>	<b>9.2%</b>	<b>4.1%</b>
Other income <sup>10</sup>	\$599,243	-25.7%	-28.0%
Production expenses	\$5,229,353	-3.7%	-1.1%
Hired farm labor expenses	\$1,423,069	4.9%	4.5%
Total cash receipts and other income	\$5,943,410	-2.9%	-4.9%
less: Total production expenses	\$5,229,353	-3.7%	-1.1%
<b>Realized net income</b>	<b>\$714,057</b>	<b>3.3%</b>	<b>-24.6%</b>
plus: Value of inventory change	\$53,395	-69.1%	140.1%
Total net income including corporate farms	\$767,452	-11.2%	-30.5%
less: Net income of corporate farms	\$341,933	-18.6%	-27.9%
plus: Statistical adjustment (less than \$50,000)			-168.0%
<b>Total net farm proprietors' income</b>	<b>\$425,527</b>	<b>-4.2%</b>	<b>-31.7%</b>
plus: Farm wages and perquisites	\$992,766	-1.2%	4.2%
plus: Farm supplements to wages and salaries	\$189,800	20.0%	4.7%
<b>Total farm labor and proprietors' income</b>	<b>\$1,608,093</b>	<b>0.1%</b>	<b>-15.7%</b>

Total cash receipts in the Washington farm sector were \$5.34 billion in 2002. This was up a scant 0.6 percent from 2000 whereas the nation saw receipts fall by 0.7 percent. Total receipts come from livestock and from crops. In Washington, livestock accounted for about 30.5 percent of total receipts while crops accounted for 69.5 percent. In the nation, livestock and crops accounted for almost equal shares, 50.5

<sup>10</sup> The Bureau of Economic Analysis includes government payments and imputed and miscellaneous income in this category. According to their definition, federal government payments to farmers are payments made to farm operators under several federal government farm subsidy programs during a given calendar year. These payments include deficiency payments under price support programs for specific commodities, disaster payments, conservation payments, and direct payments to farmers under federal appropriations legislation.



**“Total cash receipts** in the Washington farm sector were \$5.34 billion in 2002.”

---

## Chapter 3 - Hours and Earnings

percent and 49.5 percent respectively. Since livestock receipts have fallen since 2000 and crop receipts have risen, Washington has benefited from its relatively greater concentration in crops, and particularly in fruits where receipts increased by over nine percent. Receipts from fruits and nuts accounted for about 39.4 percent of crop receipts in Washington and 13.1 percent in the nation.

In Washington, farm receipts decreased by less than farm expenses to produce an increase of 3.3 percent in realized net income. Total net income, though, is down, but still by less than in the nation (due to less of an increase in the value of inventories). Proprietor's income, which is the closest measure to the fiscal health of small farms, was down from 2000 but by much less than in the nation. The Washington farm sector has only held steady since 2000, but it is doing much better than the nation which saw serious declines. In real terms though, prices rose about 4.1 percent between 2000 and 2002, this would imply a real decline in purchasing power for all measures of farm income both at the state level and at the national level.



***“The Washington farm sector has only held steady since 2000, but it is doing much better than the nation which saw serious declines.”***



# Chapter 4 - Farm Structure

## FARM STRUCTURE

### Farm Size (Acres)

The number of farms in Washington has declined by 10.3 percent from 1997 to 2002, to 35,997, a trend that has been occurring since the early 1900s. According to the National Agricultural Statistics Service, the increased use of machines and government price supports encouraged farmers to take advantage of economies of scale to increase productivity. Both the higher productivity of large farms and the huge increase in supply of agricultural products has led many small farms to go out of business. Average farm size went from around 150 acres in 1900 to around 440 by 1997. Over the same period, the number of farms declined from around 5.8 million to just over 2 million.

Despite the long term trend towards fewer and larger farms, the majority of farms remain small. In both 1997 and 2002, the category with the greatest number of farms was 10 to 49 acres. This category has accounted for about 37 percent of all farms over the period. Very small farms, 1-9 acres have declined as a share of all farms, while farm categories ranging from 50-179, 180-499, and 500-999 acres have all increased slightly as a share of the total. The very largest category, 2000 or more acres, has also increased slightly.



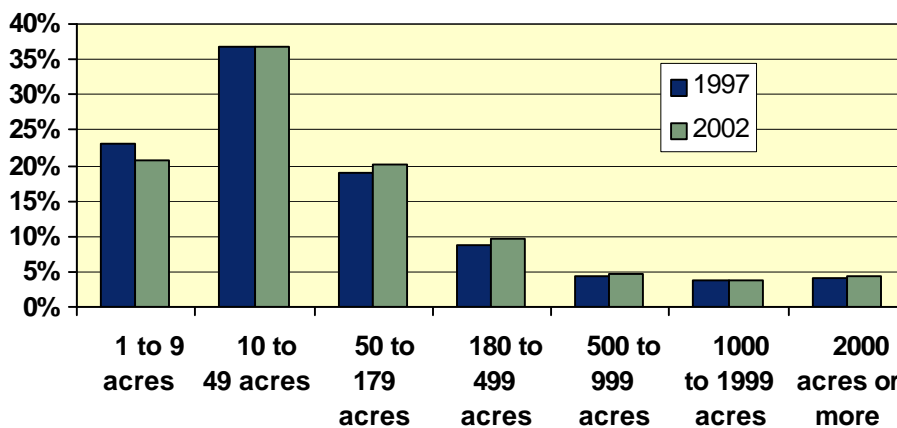
**“Average farm size** went from around 150 acres in 1900 to around 440 by 1997.”

**Figure 31**

Distribution of Farms by Size, Washington 1997 and 2002

Source: 2002 Census of Agriculture – Preliminary Data

### Over three-quarters of all farms in Washington are under 180 acres



On average, Washington farms tend to be smaller than farms across the nation. In Washington, farms under 50 acres account for about 58 percent of all farms, while nationally they account for about 34 percent. Nationally more farms are concentrated in the 50 to 500 acre category, 49 percent compared to 30 percent in Washington. Optimal farm size depends critically on the type of farm product produced. Washington has a relatively high share of fruit crops which are less easily mechanized than field grains and don't require large amounts of acreage for grazing.

## Firm Dispersion and Size (Employment)

Most firms are in the fruit and tree nut sector. This sector accounted for 42.5 percent of all agricultural firms in 2003. Since 2001, the number of firms has declined in almost all sub-sectors.

**Figure 32**  
Number of Agricultural Firms

The number of firms has declined since 2001  
in almost all agricultural sectors

Agriculture Firms Agriculture Sub-sector	Year 2001 Number of Firms	Year 2003 Number of Firms	Percent Change 2001-2003
Fruit and tree	13,710	12,657	-7.7%
Oilseed and grain	5,690	5,126	-9.9%
Cattle	3,237	2,957	-8.6%
Other crops	3,053	2,956	-3.2%
Vegetable and melon	2,092	1,708	-18.4%
Greenhouse, nursery and floriculture	1,693	1,527	-9.8%
Support for crop	1,250	1,231	-1.5%
Support for animal	650	692	6.5%
Other animal	630	559	-11.3%
Animal aquaculture	158	186	17.7%
Poultry and egg	143	137	-4.2%
Sheep and goat	36	26	-27.8%
Hog and pig	13	16	23.1%
<b>Total</b>	<b>32,355</b>	<b>29,778</b>	<b>-8.0%</b>

The largest percent declines came in sheep and goat farming and vegetable and melon farming. While the absolute decline in sheep and goat farming was only ten farms, vegetable and melon farming declined by 384 farms. The only sectors to add farms were hog and pig farms, up three farms, and support for animal activities, up 42 firms.

**Figure 33**  
Agriculture Active Firms by Region

All regions of the state saw a loss in the number of farms since 2001

Agriculture Active Firms Region	Year 2001 Number of Firms	Year 2003 Number of Firms	Percent Change 2001-2003
North Central Washington/Columbia Basin	10,319	9,503	-7.9%
Tri-County	7,152	6,562	-8.2%
Eastern	4,554	4,143	-9.0%
Benton and Franklin	3,050	2,840	-6.9%
Northwest	2,353	2,220	-5.7%
Pacific Mountain	1,350	1,225	-9.3%
Seattle-King County	872	810	-7.1%
Snohomish	680	627	-7.8%
Spokane	684	577	-15.6%
Southwest	592	567	-4.2%
Tacoma-Pierce County	448	442	-1.3%
Olympic Consortium	300	262	-12.7%
<b>Total</b>	<b>32,354</b>	<b>29,778</b>	<b>-8.0%</b>

**“The only sectors** to add farms were hog and pig farms, up three farms, and support for animal activities, up 42 firms.”



## Chapter 4 - Farm Structure

The largest number of firms is in the North Central Washington/Columbia Basin area. Between 2001 and 2003, though, this area lost about 816 firms or about a third of the state's total loss of agricultural firms. The largest percent declines took place in Spokane and the Olympic Consortium, although the Olympic Consortium started from a small base.

**Figure 34**  
Agriculture Active Firms by Size

**Most agricultural firms that went out of business were very small**

Agriculture Active Firm Size	Year 2001 Number of Firms	Year 2003 Number of Firms	Percent Change 2001-2003
0	8,750	5,110	-41.6%
one	4,697	5,542	18.0%
2 to 10	12,090	12,435	2.9%
11 to 50	5,345	5,281	-1.2%
51 to 500	1,473	1,410	-4.3%
Total	32,355	29,778	-8.0%

Over a third of agricultural firms have between two and ten employees (note that the categories are not uniform in size so it is hard to make any meaningful comparison). This was also one of only two size categories that saw growth between 2001 and 2003. The number of farms with only one employee also increased. The largest decline came in those farms with no covered employees. Larger agricultural firms, those with over ten employees, also saw declines.

### Farm Turnover<sup>11</sup>

Firms have gone out of business across the economy over the recession and slow recovery. In agriculture, as seen above, the trend in total number of firms is down as well. Still, it was the net change in firms that was examined above. In this section the net change is decomposed into those firms that have gone out of business and new firms. The net numbers do not exactly equal the changes noted above because to identify new and dying firms, firm account numbers have to be tracked rather than actual firms.

Among covered firms whose accounts have become inactive, fruit and nut tree farms saw the largest number of firms becoming inactive. It was also the category, though, which saw the largest number of newly active firms.



**“Firms have gone out of business across the economy over the recession and slow recovery.”**

<sup>11</sup> Note that the firm counts of active and inactive accounts may not be consistent with the count of the number of firms since an account and a firm can differ. For example, one farm establishment may have a number of account numbers associated with it.

**Figure 35**

Number of Firms Covered for Unemployment Insurance Whose Accounts Have Become Inactive and Number of Covered Firms with New Accounts  
Washington, 2001 and 2003

Source: LMEA –Employment Security Department.

**Even as many firms go out of business,  
there were substantial numbers of new firms**

Firms	Agriculture Inactive Firms		Agriculture Active Firms	
	2001	2003	2001	2003
Fruit and nut tree	347	210	130	148
Oilseed and grain	130	89	37	34
Cattle	80	79	38	32
Other crops	73	50	40	52
All other	38	40	18	20
Vegetable and melon	77	31	17	16
Greenhouse, nursery and floriculture	35	28	19	21
Support for animal	29	22	8	24
Support for crop	37	21	22	29
<b>Total</b>	<b>846</b>	<b>570</b>	<b>329</b>	<b>376</b>



**“The number of firms becoming inactive declined in eight of the nine agricultural categories between 2001 and 2003. ...”**

The number of firms becoming inactive declined in eight of the nine agricultural categories between 2001 and 2003 while the number of firms becoming active increased in six of the nine categories. In particular, the large number of firms that went out of business in fruit and nut tree farming in 2001 seems to have moderated by 2003. This may have been associated with a move towards different apple varieties rather than with the recession.

By a large margin, most firms going out of business in both 2001 and 2003 were very small. In fact, many had no employees. This means, in terms of covered employment, there was an owner, but no covered employees. Having zero employees is not unusual, especially if the firm is going out of business. It may have lost most of its employees over the previous few years and was just finishing up the paper work in the final year. Newly active firms are also biased towards very small firms. Still, most newly active firms had between two to ten employees.

**Figure 36**

Number of Firms Becoming Active/Inactive and Employees Per Firm

**Highest turnover levels occurs among very small firms**

Employees Per Firms	Number of Firms Becoming Inactive		Number of Firms Becoming Active	
	2001	2003	2001	2003
0	512	238	66	14
1	91	92	64	79
2-10	143	127	141	139
11-50	52	47	37	50
51-500	12	15	9	10

## Chapter 4 - Farm Structure

There were relatively few large firms either going out of business or starting up in either 2001 or 2003. In fact, in 2003, only two firms with over 100 employees became inactive and only three firms with over 100 employees became active.

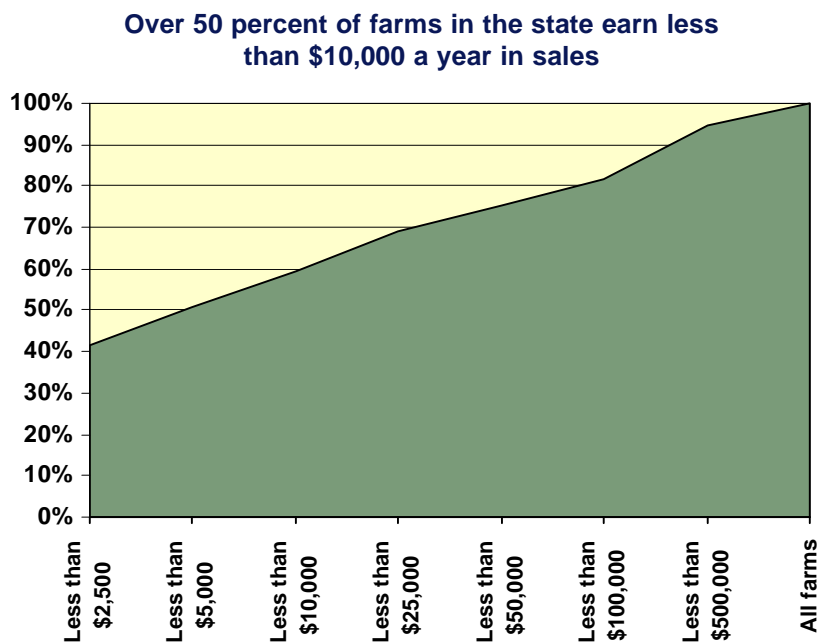
### Farming as a Profession

There are many small farms in the state and many of these farms do not provide an adequate income for the operator. Over 50 percent of farms in Washington earned less than \$5,000 in sales in 2002.

**Figure 37**

Farms by Value of Sales, Washington 2002

Source: 2002 Census of Agriculture – Preliminary Data



Sixty-nine percent made less than \$25,000, which after expenses are taken off, would still not support a family. Only about a quarter of all farms generated sales in excess of \$50,000 a year in 2002. In the nation, on average, farms provided even less income—76 percent of all farms earned under \$25,000 in annual sales while only 15.7 percent generated sales above \$50,000.

As would be expected from the small values of sales generated, most farms in Washington (about 85 percent in 2002) are family or individually operated. Partnerships made up only two percent while corporations made up 2.5 percent of farms statewide. Surprisingly, though, many operators did not seek additional income elsewhere; 46.8 percent did not work off the farm during the year, while only 36 percent worked 200 days or more off the farm. An even larger percentage (58.3 percent) of operators listed farming as their primary occupation. This is up from 1997 when only 46.5 percent of operators listed farming as their primary occupation. At the same time the average age of farm operators in the state has risen from 53.2 in 1997 to 55.4 in 2002.



**“Sixty-nine percent** made less than \$25,000, which after expenses are taken off, would still not support a family.”

The vast majority of operators list their race as white, 97.3 percent. Only 1.2 percent list race as American Indian and 0.8 percent as Asian. Ethnicity is listed separately from race and only 5.1 percent of operators are Spanish, Hispanic, or Latino despite the large numbers of Hispanics working as hired labor in agriculture. Although almost half of all operators are women, 49.5 percent, only 15.7 percent of principal operators are women. Women are equally likely to list farming as their primary occupation as men and are slightly less likely to spend 200 or more days working off the farm, 32.5 percent of all women operators.

***“Ethnicity*** is listed separately from race and only 5.1 percent of operators are Spanish, Hispanic, or Latino despite the large numbers of Hispanics working as hired labor in agriculture.”



# Chapter 5 - Demographics and Unemployment

## CHARACTERISTICS OF AGRICULTURAL WORKERS

### Number of Employers

The average Washington worker in agriculture works for more employers than does the average worker in other industries. In 2003, workers who worked at least some time in agriculture had on average 2.46 different employers compared to 1.37 for workers who did not work in agriculture. Those agricultural workers, however, who only worked in agriculture had fewer employers than those who worked both in agriculture and in another nonagriculture industry (1.37 compared to 3.66).











**“Nationally**, relative to the general working population, farm workers tend to be young, single, Hispanic, males with less than a high school education.”

**Figure 38**

Average Number of Agricultural Workers Working for More Than One Employer in a Year

Source: LMEA – Employment Security Department

2003				
Individual Workers	144,814	105,179	39,635	3,168,195
Average Number of Employers	2.46	2.01	3.66	1.37

-  Workers who worked at least some time in agriculture
-  Only in agriculture
-  Workers who worked both in agriculture and another industry
-  All workers

The total number of individual workers in covered employment declined slightly from 2002 to 2003 as did the number of workers who found work in both agriculture and nonagriculture industries in the same year. This evidence of the slow labor market recovery did not extend to those workers who worked only in agriculture where the number of workers increased by 1.3 percent between 2002 and 2003.

### Demographics – National

Almost half of all hired farm workers are located in five states, California (225,000), Texas (75,000), North Carolina (27,000), Florida (26,000), and Washington (26,000)<sup>12</sup>. Nationally, relative to the general working population, farm workers tend to be young, single, Hispanic, males with less than a high school education.

<sup>12</sup> Number in parentheses is the average weekly number of hired farm workers in 2002.

## Chapter 5 - Demographics and Unemployment

**Figure 39**

Agricultural Worker Characteristics

Source: 2002 Current Population Survey Earnings Microdata for the United States

**Agricultural workers tend to have different characteristics than other wage and salary workers**

	Hired Farm Workers	All Wage and Salary Workers
Hispanic	42.0%	11.6%
Less than 24 years old	29.4%	16.4%
Never married	36.7%	29.2%
Less than 12 years schooling	52.2%	12.4%
Not a U.S. citizen	33.6%	8.1%

Still, there are many exceptions to this tendency. Only in the category of less than twelve years of schooling does the characteristic account for the majority of hired farm workers. These characteristics also vary quite a bit by activity within agriculture, for example, workers in crops are more likely to be Hispanic and have less education than do those in livestock or agricultural services<sup>13</sup>.

### Demographics – State

Although statewide data are not available for race, they are for gender and age<sup>14</sup>. Agricultural workers in Washington tend to be much more concentrated in crops rather than in other activities.

**Figure 40**

Annual Average Employment for 2002 - Based on LED Total Employment

Agriculture Defined as NAICS 111, 112, 1151, and 1152

Source: Local Employment Dynamics (LED) program of the U.S. Census Bureau

<http://lehd.dsd.census.gov/led>

**Washington agricultural workers are more likely to be very young or very old relative to other industries**

Employment	All Industries	Agriculture Only
Male	51.3%	60.7%
14-24	18.6%	22.9%
25-34	23.1%	21.3%
35-44	24.5%	23.5%
45-54	21.4%	16.0%
55-64	9.8%	7.9%
65 and above	2.5%	8.4%

Agricultural workers in Washington tend to be younger than other wage and salary workers just as they are at the national level. However, the difference in young worker prevalence between agriculture and other industries is less extreme in Washington than it is at the national level. It is interesting to note that agricultural workers are also more likely to be 65 or over than workers in other industries. This indicates a greater potential retirement impact on agriculture than in most other industries. Washington agricultural workers are also more likely to be male than other workers.

**“ . . . Workers in crops** are more likely to be Hispanic and have less education than do those in livestock or agricultural services.”



<sup>13</sup> See the Economic Research Service of the United States Department of Agriculture for more information. [www.ers.usda.gov/Briefing/Farmlabor/Demographics/](http://www.ers.usda.gov/Briefing/Farmlabor/Demographics/)

<sup>14</sup> The Local Employment Dynamics program is a joint federal and state venture which combines demographic data from the U.S. Census with employment and wage data from state unemployment insurance tax files.



# Chapter 5 - Demographics and Unemployment

## UNEMPLOYMENT CLAIMS

### Claims by Industry and Occupation

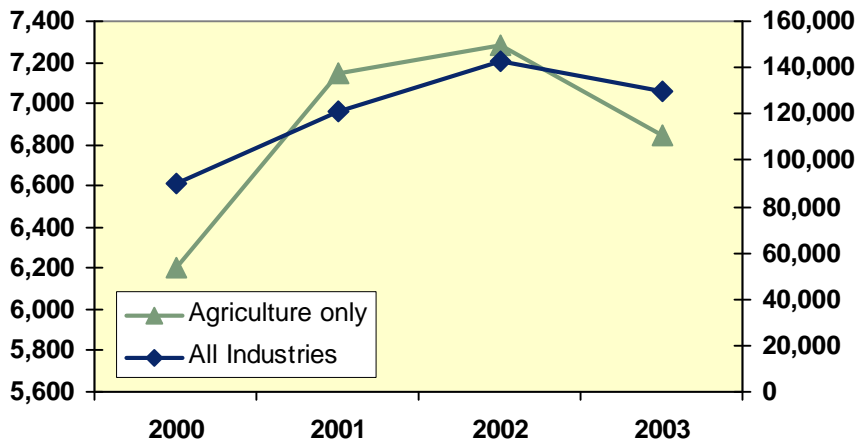
Most agricultural workers in Washington are covered for unemployment insurance if they meet criteria<sup>15</sup> of minimum hours worked and legal immigration status. Seasonal industries often have higher rates of claims than do other industries. Although no official estimates are made of total unemployment rates by industry, the average annual number of claims can be divided by an estimate of average annual employment. Using this method, in 2003 the unemployment ratio for agriculture was 8.6 percent and for all industries was 4.9 percent or almost half of that in agriculture<sup>16</sup>.

**Figure 41**

Total Unemployment Insurance Claims  
Washington 2000 through 2003

Source: LMEA – Employment Security Department

**Unemployment insurance claims in agriculture rose more during year of recession than average of all industries**



Claims in agriculture rose more sharply than did claims in all industries between 2000 and 2001 but then increased slightly in 2002 and sharply declined in 2003. The impact of the recession, or the tail end of the draught, may have caused the spike in 2001. Agriculture does show its independence from the rest of the economy in its sharp drop in claims in 2003.

The seasonal pattern of agricultural claims shows a fairly predictable pattern of high numbers of claims in the winter when agricultural employment is low and low numbers of claims in the late summer and early fall when agricultural employment peaks.



**“Most agricultural workers** in Washington are covered for unemployment insurance if they meet criteria. . . .”

**“The seasonal pattern** of agricultural claims shows a fairly predictable pattern of high numbers of claims in the winter when agricultural employment is low and low numbers of claims in the late summer and early fall when agricultural employment peaks. . . .”



<sup>15</sup> Criteria include a minimum of 680 hours of work in covered employment during the base year and that they are unemployed through no fault of their own. Benefit amounts are calculated based on reported wages by employers for the base year.

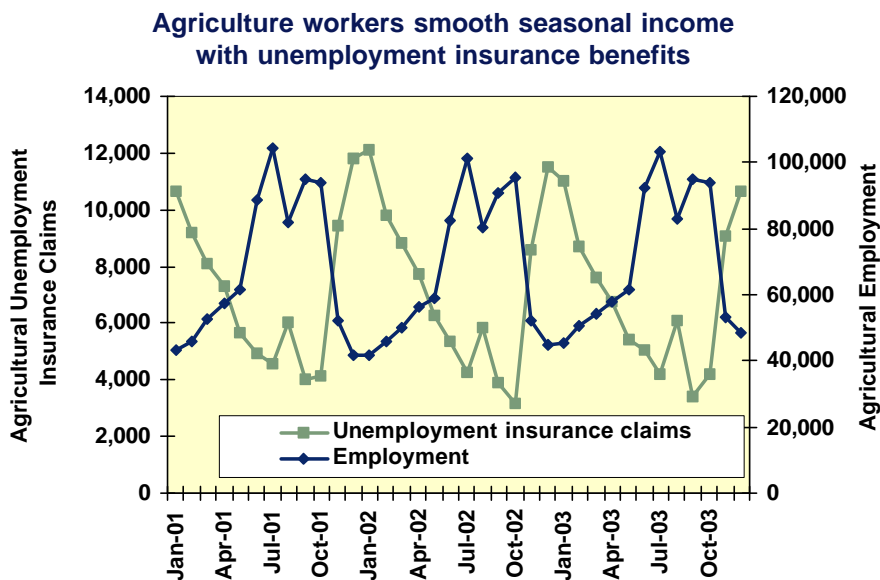
<sup>16</sup> The official, estimated, total unemployment rate for all industries in the state was 7.6 percent in 2003, so this claims calculated ratio is lower than the total unemployment rate, which include unemployed not eligible for unemployment insurance.

## Chapter 5 - Demographics and Unemployment

**Figure 42**

Agricultural Employment and Agricultural Unemployment Insurance Claims  
Washington, January 2002 through December 2003

Source: LMEA – Employment Security Department



Unemployment insurance claims are close to the mirror image of employment. This indicates the dependence of the agricultural sector on the unemployment insurance system to smooth worker incomes.

**Figure 43**

Continued Claims for the Top 15 Detailed Agricultural Industries  
Standard Industrial Classification (SIC) Codes; Washington State 2003

Source: LMEA – Employment Security Department

### Some agricultural sectors are more seasonal than others

Industry	Total Claims 2003
Deciduous tree fruits	8,364
Crop preparation service for market	4,884
Field crops, except cash grains, N.E.C.	1,605
General farms, primarily crop	1,282
Ornamental floriculture nursery products	1,061
Grapes	860
Irish potatoes	791
Vegetables and melons	775
Ornamental shrub and tree services	475
Wheat	405
Veterinary services for animal specialties	360
Dairy farms	338
Berry crops	304
Farm management services	270
Farm labor contractors and crew leaders	219

## Chapter 5 - Demographics and Unemployment

Some agricultural industries are more seasonal than others, for example, deciduous tree fruit has a relatively high number of claims while farm management services and farm labor contractors and crew leaders have fewer. Total employment is also a factor in the absolute number of claims, but employment is not available in the Standard Industrial Classification (SIC) coding system.

**Figure 44**

Continued Claims for the Top 10 Occupation Groups  
Standard Occupational Categories (SOC) Codes  
Washington State 2001-2003  
Source: LMEA – Employment Security Department

**Temporary or seasonal occupations tend to have high numbers of claims**

Occupation	Continued Claims 2003	Continued Claims 2002	Continued Claims 2001
Construction trades workers	57,904	62,242	58,748
Other production occupations	30,195	36,381	35,056
Material moving workers	21,882	26,507	27,061
Agricultural workers	21,321	23,179	24,429
Other management occupations	19,882	19,200	15,831
Motor vehicle operators	18,626	19,878	18,602
Retail sales workers	15,900	18,127	16,211
Office and administrative support workers	13,872	13,877	12,827
Computer specialists	13,111	15,770	13,825
Information and record clerks	13,041	16,510	14,366

The total number of unemployment insurance claims was highest in construction due both to the seasonal nature of the work and to the high number of employees in this occupational group. Agricultural workers are fourth down on the list for much the same reason. Other occupations within the top ten are there simply because of their high overall employment, like retail sales workers, or because of layoffs associated with the recent recession, for example, computer specialists. The number of claims listing agriculture as their most recent occupation has risen over the past three years in part reflecting the slow to declining employment growth in many crop industries.

### Demographics of Claimants

Compared to other industries in Washington, agricultural claimants tend to be Hispanic. The prevalence of Hispanic claimants in agriculture is obviously a reflection of the high number of Hispanics who work in agriculture relative to other industries. Still, care must be taken in drawing a direct relationship between the ethnicity of claimants versus the ethnicity of agricultural workers. Seasonal crop workers are more likely to be claimants than other types of agricultural workers. If seasonal crop workers are also more likely to be Hispanic, then Hispanics would have a greater representation among agricultural claimants than among agricultural workers in general.



**“NAICS** – The North American Industry Classification System has replaced the U.S. Standard Industrial Classification (SIC) system. NAICS will reshape the way we view our changing economy.”

**“The number of claims** listing agriculture as their most recent occupation has risen over the past three years. . . .”

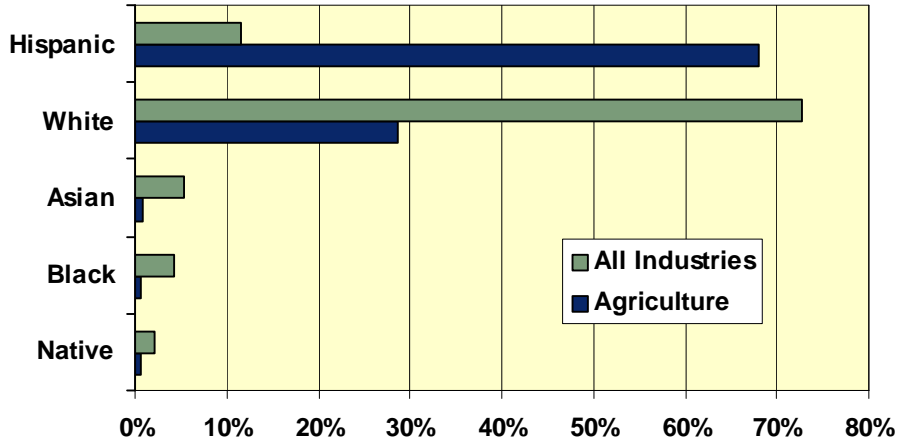


# Chapter 5 - Demographics and Unemployment

**Figure 45**

Distribution of Continued Claims by Race and Ethnicity  
Washington 2003  
Source: LMEA – Employment Security Department

**Hispanics represent a larger percentage of claimants in agriculture than in other industries**



**“Females** make up about 39 percent of all agricultural workers but only 32 percent of claimants in agriculture.”

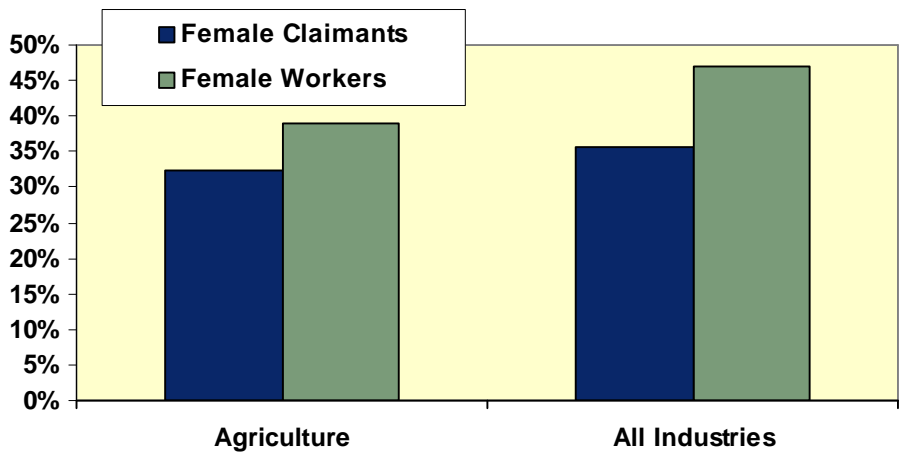


Females are less likely than their male counterparts to be unemployed on average. In agriculture, though, the difference is less extreme. Females make up approximately 39 percent of all agricultural workers but only 32 percent of claimants in agriculture. The explanation is probably very similar to that of ethnicity where females are less likely to be seasonal crop workers where workers have the greatest likelihood of becoming unemployed.

**Figure 46**

Female Claimants and Female Workers for Agriculture and for All Industries  
Washington 2002  
Source: LMEA – Employment Security Department

**In both agriculture and all industries, females are less likely to be unemployed than their male counterparts**



## Chapter 5 - Demographics and Unemployment

### Immigration

According to statistics from the late 1990s, over 80 percent of farm workers in the U.S. were foreign born. Of those, 95 percent were born in Mexico. The number of immigrants from Mexico in the U.S. labor force nearly doubled between 1990 and 2000, increasing from 2.6 million to 4.9 million. While only four percent of the U.S. labor force was born in Mexico, Mexican immigrants account for 25 percent of all foreign-born workers.

Among U.S. farm workers, 44 percent are *non-migrants*, 39 percent are *shuttle migrants*, and the remaining 17 percent *follow the crop*. A *shuttle migrant* works farm jobs that are less than 75 miles apart whereas a migrant who *follows the crop* work jobs more than 75 miles apart. *Follow the crop* and *shuttle migrants* are more likely to be foreign born, 90 percent, than are *non-migrant* farm workers, 66 percent.

Nearly 42 percent of farm workers have a home outside the United States where they go during the off season. This migration between other countries and the U.S. decreases the longer the migrant works in the U.S. Half of all farm workers who have been in the U.S. for less than two years report going home during the off season. Only a third of farm workers, who have worked in the U.S. for more than two years, reported going home<sup>17</sup> on a seasonal basis.

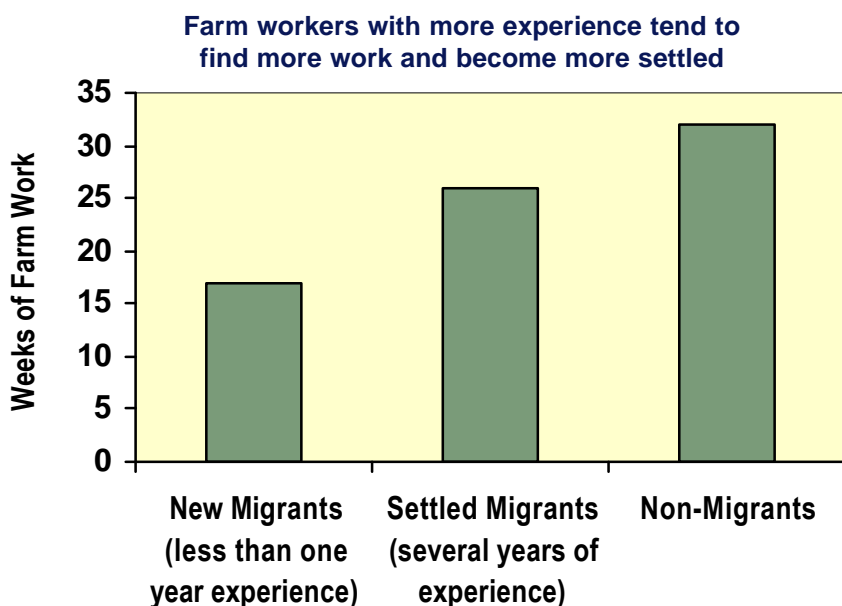


**“Follow the crop and shuttle migrants are more likely to be foreign born, 90 percent, than are non-migrant farm workers, 66 percent.”**

**Figure 47**

National Agricultural Workers

Source: National Agricultural Workers Survey, 1997-1998



Settled migrants also obtain steadier employment as the number of weeks worked in farm work increases with experience. It appears that many migrant farm workers may follow a path of increasing security. With more experience, they are able to secure more work and eventually to settle. Still, it is unclear whether workers move between these categories or if there are separate paths into each category.

<sup>17</sup> National Agricultural Worker Survey, 1997-98, U.S. Department of Labor.

---

## Chapter 5 - Demographics and Unemployment



**“Migrants** are more likely to continue to play an important role in Washington agriculture in the future.”

Only four percent of Mexican-born farm workers are fluent in English which undoubtedly makes it more difficult for them to integrate into American life and become U.S. citizens. Of all farm workers, 52 percent lack work authorization, 25 percent were legal permanent residents, and 22 percent are citizens.

Migrants are likely to continue to play an important role in Washington agriculture in the future. More current data is needed on immigration status, but it does appear that many migrants move towards more permanent jobs over time.

# Chapter 6 - Outlook and Development

## OUTLOOK AND NEW DEVELOPMENTS

Exports tend to drive agriculture in the United States more than they do other industries. United States agricultural exports have accounted for 20 to 30 percent of farm income during the past thirty years and are expected to remain at that level<sup>18</sup>. Total exports are less than 10 percent of total output. The United States also runs a trade surplus in agriculture, compared to a trade deficit in goods and services of about 4.5 percent of GDP in 2003.

It is difficult to estimate the impact of agricultural exports on state agriculture mainly because it is hard to get an accurate estimate of state agricultural exports. Export information is based on a form called the Shipper's Export Declaration which asks for the "state where the product began its journey to the point of export"<sup>19</sup>. Unfortunately, exporters often list the state where the export originated rather than the state of production. As a state with extensive ports, Washington is often given credit for exports which were grown or produced elsewhere. Still, a basic understanding of the composition of exports of Washington agriculture can be developed from this information. According to the Washington Department of Agriculture, Washington exports about 1/3 of its food and agriculture production. This implies that exports support about 1/3 of all jobs related to the growing and processing of foods.



**"Total exports are less than total output."**

**Figure 48**

Exports from Washington (note not all exports were originally produced in Washington)  
Washington, 2001 through 2003

Source: Washington Statistical Service

### Washington exports some portion of all its major agricultural products

Description	2001	2002	2003	Percent Change 2002-2003
<b>Total Agricultural and Food Exports</b>	<b>\$4,210,002,499</b>	<b>\$3,866,753,805</b>	<b>\$5,446,182,676</b>	<b>40.8%</b>
Miscellaneous grain/seed/fruit	\$787,932,085	\$705,083,827	\$1,663,790,739	136.0%
Cereals	\$981,643,474	\$843,630,303	\$1,114,670,729	32.1%
Fish and seafood	\$654,961,746	\$505,430,569	\$532,830,501	5.4%
Edible fruit and nuts	\$448,159,796	\$450,479,823	\$459,346,080	2.0%
Meat	\$206,770,273	\$201,191,201	\$393,608,376	95.6%
Preserved food	\$269,557,003	\$264,103,985	\$294,317,677	11.4%
Prepared meat/fish/etc.	\$160,618,221	\$165,894,508	\$168,605,778	1.6%
Vegetables	\$138,889,052	\$141,931,078	\$157,659,837	11.1%
Food waste; animal feed	\$119,985,373	\$133,402,852	\$150,343,956	12.7%
Baking related	\$64,230,153	\$73,046,874	\$88,951,236	21.8%
Dairy/eggs/honey/etc.	\$60,588,763	\$66,122,536	\$74,417,595	12.5%
Spices/coffee and tea	\$54,077,055	\$59,642,097	\$66,070,052	10.8%
Lac;vegetable sap/extract	\$55,967,152	\$44,621,030	\$57,422,896	28.7%
Live tees and plants	\$47,393,929	\$51,073,111	\$54,527,360	6.8%
Fats and oils	\$21,233,079	\$26,751,358	\$42,058,773	57.2%
Miscellaneous food	\$30,771,207	\$40,350,284	\$41,196,484	2.1%
Beverages	\$29,652,116	\$22,906,831	\$28,921,008	26.3%
Other of animal origin	\$11,568,433	\$25,377,582	\$16,911,004	-33.4%
Milling;malt;starch	\$26,546,112	\$17,205,418	\$13,466,152	-21.7%
Sugars	\$9,966,145	\$10,415,845	\$10,201,513	-2.1%
Cocoa	\$12,035,673	\$8,734,266	\$8,489,520	-2.8%
Live animals	\$17,127,526	\$9,308,203	\$8,317,891	-10.6%
Other vegetable	\$328,133	\$50,224	\$57,519	14.5%

<sup>18</sup> Economic Research Service of the U.S. Department of Agriculture. Briefing room, U.S. agricultural trade.

<sup>19</sup> This statement about trade data comes from the Massachusetts Institute for Social and Economic Research (MISER) data description.



**“Washington exports most of its agricultural products to ten countries (90 percent in 2003).”**

The first category, miscellaneous grain/seed/oil seeds, consist primarily of soybeans and feed corn, produced in the midwest that pass through Washington ports and were attributed to Washington. Cereals, mostly wheat, are a bulk commodity which is greatly affected by the foreign exchange rates. The third category, though, edible fruit and nuts were grown in Washington and their value has remained fairly constant over the past three years. The value of meat exports increased markedly between 2002 and 2003, but will undoubtedly decline in 2004 due to export restrictions on beef resulting from the identified case of mad cow disease. Vegetables showed a fairly constant rate of increase between 2001, 2002, and 2003, as did dairy/eggs/honey/ etc. A few of the smaller categories towards the bottom of *Figure 48* have seen declines from 2001 to 2003.

Although some data are conflicting, The Department of Agriculture reported that in 2002, Washington was the ninth largest exporter of agricultural products in terms of value accounting for 3.4 percent of the nation’s agricultural exports. California was the top state accounting for 13.4 percent of the nation’s agricultural exports. Most of the other top ten states were in the upper mid-west and great plains (Texas, the sixth largest, was the only exception). The top ten states together accounted for over 57 percent of the nation’s agricultural exports in 2002.

Washington exports most of its agricultural products to ten countries (90 percent in 2003). Washington appears to have some advantage with nations in Asia and with Canada which borders Washington<sup>20</sup>. Japan headed the list in each of the past three years. This may change somewhat in 2004 with the Japanese ban on beef imports. Still the value of exports to Japan exceed that of Canada, the next largest destination for U.S. exports, by about 100 percent or \$500 million dollars a year.

**Figure 49**

Top Export Destinations for Washington Agricultural Products

### Japan is the top export destination for Washington agricultural products

Rank Country	2001	2002	2003	% of Exports	Cum. %
All Food and Agriculture	\$3,410,501,981	\$3,136,292,396	\$3,765,480,933	100%	
1 Japan	\$1,126,687,888	\$910,701,450	\$1,154,607,541	31%	31%
2 Canada	\$494,825,035	\$535,288,789	\$602,118,456	16%	47%
3 Taiwan	\$379,855,330	\$338,700,344	\$524,251,612	14%	61%
4 Europe	\$276,204,117	\$227,876,258	\$256,600,595	7%	67%
5 China/Hong Kong	\$148,118,659	\$159,933,605	\$196,127,481	5%	73%
6 Korean Republic	\$248,894,899	\$209,480,361	\$190,383,572	5%	78%
7 Philippines	\$162,937,195	\$161,941,678	\$170,462,044	5%	82%
8 Mexico	\$178,371,576	\$146,991,879	\$148,171,582	4%	86%
9 Thailand	\$45,433,170	\$52,042,531	\$72,683,325	2%	88%
10 Indonesia	\$59,881,052	\$56,204,295	\$58,043,580	2%	90%
Other	\$289,293,060	\$337,131,206	\$392,031,145	10%	100%

<sup>20</sup> U.S. top agricultural export destinations are Japan, European Union, Canada, Mexico, Republic of Korea, Taiwan, China, Hong Kong, Egypt, and Russia in order of the value of exports. Source: Economic Research Service, U.S. Department of Agriculture.



## Chapter 6 - Outlook and Development

Japan, Canada, and Taiwan accounted for almost two-thirds of Washington's exports in 2003. Taiwan does not have official trading relations with China, which considers Taiwan a renegade Chinese province, and does have good relations with the United States as evidenced by the 14 percent of Washington exports that go to this small country, almost twice that which goes to all of Europe. China, South Korea, and the Philippines each account for about five percent of Washington agricultural exports. Between 2002 and 2003, agricultural exports to Taiwan increased by the largest percentage (54.8 percent) followed by Thailand and Japan. South Korea was the only country in the top ten where agricultural exports declined.



**“Japan, Canada, and Taiwan accounted for almost two-thirds of Washington's exports in 2003.”**

### NATIONAL EXPORTS

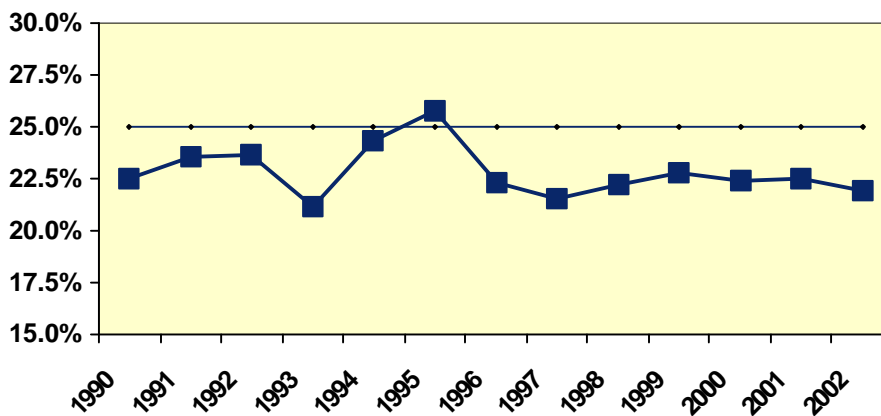
According to the U.S. Department of Agriculture, U.S. agricultural products are expected to benefit from an increase in consumption, an increase in efficiency in the trade of agricultural products, and strong prices. Improving world economic growth, particularly in developing countries, should help key U.S. agricultural exports. The value of U.S. agricultural exports is projected to grow on average 2.6 percent annually from \$56 billion in fiscal year 2003 to \$72 billion in 2013. Competition in global markets is expected to remain strong. The value of U.S. agricultural imports is expected to grow by about the same amount as exports reaching \$61 billion in 2012. The agricultural trade surplus is expected to remain relatively stable in the range of \$10 to \$12 billion a year.

#### Figure 50

Export Share of the Volume of Farm Production  
United States, 1990-2002

Source: Economic Research Service, U.S. Department of Agriculture

#### The agricultural sector exports about a quarter of production



The U.S. export share of the volume of farm production has also remained fairly constant since 1995 at around 22 percent.

### NATIONAL TRADE STATISTICS FOR TOP WASHINGTON AGRICULTURAL PRODUCTS

#### Apples

Washington produces over half the nation's apple crop and the U.S. exports over half of all domestic apples produced to Canada and Mexico. Although apple exports to Mexico were down in 2003 from 2002 levels, the long-term trend is up. Since 1998, the U.S. has increased fresh apple exports to Mexico by more than any other country, up \$32.3 million or by 84 percent. Exports to Canada are up by \$25.6 million and to Indonesia \$16.7 and to Malaysia \$10.3 million.

**Figure 51**

Change in Fresh Apple Exports

**Almost half of all fresh apple exports go to  
neighboring countries, Canada and China**

	Fresh apple Exports 2003	Change in Exports 1998-2003 (in \$1000's)	Percent Change in Exports 1998-2003
Canada	26.6%	25,613	38.3%
Mexico	20.4%	32,345	83.9%
Taiwan	9.1%	-36,609	-53.7%
Hong Kong	6.8%	-2,984	-11.2%
Indonesia	5.8%	16,708	493.7%
United Kingdom	5.4%	3,422	22.3%
Malaysia	4.9%	10,283	151.0%
United Arab Emirates	3.0%	-2,196	-17.4%

Exports are down by \$36.6 million to Taiwan, by \$12.5 million to Saudi Arabia, and by \$9.6 million to Venezuela. Fresh apple exports both have high variance from year to year due to changing yields, but also dramatic changes in trends due to domestic political and economic stability, trade relations, and exchange rates.

#### Dairy

Most dairy exports from the United States go to our close neighbors Mexico and Canada. All the rest of the countries on the list are Asian. The European Union has a large and protected dairy industry itself. Fresh dairy products are hard to transport limiting the growth possibilities for exports to Asia. China, for instance, is seeing a large increase in demand for fresh dairy products as per capita income increases. Most of this demand is likely to be met, however, by increases in domestic Chinese dairy herds rather than through imports.

***“Most dairy exports from the United States go to our close neighbors Mexico and Canada.”***



## Chapter 6 - Outlook and Development

**Figure 52**

Distribution of Dairy Exports, 2003

### Half of dairy exports go to Mexico and Canada

	Distribution of Dairy Exports 2003	Change in Exports 1999-2003 (in \$1000's)	Percent Change in Exports 1999-2004
Mexico	24.6%	81,246	45.8%
Canada	23.3%	58,329	31.2%
Japan	7.9%	-25,803	-23.6%
Korea, Republic of	4.2%	17,885	68.0%
Philippines	3.8%	7,807	24.5%
China, Peoples Republic	3.7%	20,978	117.3%
Taiwan	2.1%	-21,811	-50.1%
Indonesia	2.1%	9,466	78.0%

Exports of dairy to most countries have increased over the past four years—by almost 50 percent to Mexico, by almost a third to Canada, by over two-thirds to South Korea, and by over 100 percent to China.

### Wheat

Exports of white wheat from the United States do not go to our traditional trading partners. Very little goes to Canada and Mexico. Canada is a large producer of wheat itself and Mexico also produces wheat and has a consumption pattern that favors corn. Besides the usual Asian export destinations of Japan and the Republic of Korea, Yemen imports 13 percent of U.S. white wheat exports. This is up over fifteen percent over the past five years. Pakistan and Bangladesh have both increased over one percent of U.S. exports of white wheat, but both have seen significant declines over the past five years.

**“Exports of white wheat do not go to our traditional trading partners.”**



**Figure 53**

White Wheat Exports, 2003

### Wheat exports go to Asia

	White Wheat Exports 2003	Change in Exports 1998-2003 (in \$1000's)	Percent Change in Exports 1998-2003
Egypt	31.3%	11,231	7.9%
Japan	16.7%	4,603	6.0%
Yemen	13.0%	23,085	56.8%
Korea, Republic of	12.0%	9,699	19.7%
Philippines	11.4%	-6,317	-10.1%
Thailand	2.9%	6,966	94.2%
Indonesia	2.0%	9,578	110.2%
Taiwan	1.6%	894	12.8%
Pakistan	1.6%	-109,520	-93.4%
Bangladesh	1.1%	-11,087	-66.6%

## Potatoes

French fries is the most common form of exported potatoes. Freezing is the most common method of exporting potatoes. Besides exports to Mexico and Canada, frozen potato exports most commonly go to Japan, China, South Korea, Taiwan, and Hong Kong. While exports to Japan have declined over the past five years, frozen potato exports have increased by over 100 percent to Mexico and by over 700 percent to China.

**Figure 54**  
Frozen Potato Exports, 2003

**Over 40 percent of frozen potato exports go to Japan**

	Frozen Potato Exports 2003	Change in Exports 1998-2003 (in \$1000's)	% Change in Exports 1998-2003
Japan	44.2%	-33,990	-18.6%
Mexico	11.5%	19,773	104.5%
Canada	9.0%	6,796	28.8%
China, Peoples Republic	7.7%	22,627	720.1%
Korea, Republic of	5.5%	2,497	15.5%
Taiwan	4.0%	-2,536	-16.0%
Hong Kong	3.7%	-7,171	-36.3%
Malaysia	2.5%	1,674	25.3%
Thailand	1.7%	2,051	55.4%
Singapore	1.7%	-2,043	-26.7%
Philippines	1.6%	-7,451	-57.8%



**“Beef exports go principally to Japan, the Republic of Korea, Mexico, and Canada.”**

Beef exports go principally to Japan, the Republic of Korea, Mexico, and Canada. Over the past five years exports to Japan have declined by a little under 11 percent, but beef exports have increased to other countries. In particular, there was a 427.1 percent increase in exports to the Republic of Korea. Japan and The Republic of Korea together accounted for over 60 percent of U.S. beef exports in 2003. Both countries have since instituted bans against U.S. beef exports. This will undoubtedly lower the value of U.S. beef exports for 2004 and probably 2005 as well.

**Figure 55**  
Beef Exports, 2003

**Over 60 percent of beef exports have gone to Japan and the Republic of Korea**

	Beef Exports 2003	Change in Exports 1998-2003 (in \$1000's)	% Change in Exports 1998-2003
Japan	37.1%	-142,432	-10.9%
Korea, Republic of	23.8%	608,128	427.1%
Mexico	19.3%	209,161	52.6%
Canada	10.2%	35,661	12.5%
Taiwan	2.2%	42,363	150.2%
Hong Kong	2.2%	34,152	99.2%
Kuwait	0.9%	24,042	834.2%
Bahamas, The	0.4%	8,094	250.1%
Egypt	0.3%	3,366	46.9%
China, Peoples Republic	0.3%	5,303	130.3%

## Chapter 6 - Outlook and Development

---

### OUTLOOK

The outlook for both exports and imports of agricultural products is fairly good over the next ten years. Exports of agricultural goods are more subject to problems of health and safety concerns than are other products as evidenced in recent concerns over Mad Cow disease. Beef exports are expected to return to normal levels in 2006 if no more cases of Mad Cow disease are discovered.

Biotechnology may also affect exports. In the United States, soy beans and corn are currently genetically modified. The European Union has regulations against the importation of genetically modified food. Recent plans to modify potatoes and wheat have even run into problems in the United States. The European Union is considering a relaxation of its standards and the ability to genetically modify food is only likely to increase as the cost falls. Biotechnology will increase in importance in international trade in agricultural products in the future.

As of late May 2004, the World Trade Organization talks concerning the expansion of freer trade to agriculture were stalled. The European Union, which has long had a very protected agricultural sector, had put forth a proposal to substantially lessen agricultural supports in industrialized countries. Developing countries wish to keep in place their protection for agriculture as they develop these industries. No agreement has yet been reached. Still, with the enlargement of the European Union, current protections of agriculture are unlikely to be maintained. This may be an excellent time to globally reduce the protection of agricultural products.

*“Recent plans to modify potatoes and wheat have even run into problems in the United States.”*

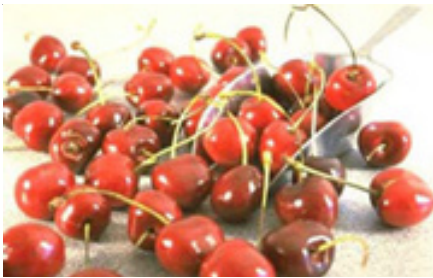


## CONCLUSION

This report provides additional evidence of the importance of agriculture in Washington in terms of both employment and earnings. Agriculture directly provided, in 2003, some 63,703 jobs and indirectly affected another half a million jobs in related industries.

Labor intensive agriculture such as tree fruits, cherries, and asparagus are highly dependent on seasonal farm labor. Most migrant workers are from Mexico, are often working without documentation, have little fluency in English, and low levels of formal education. Despite these obstacles there is evidence at the national level that migrants can improve their position with work experience. The average number of weeks of agricultural work increase with experience as the need to migrate declines.

Although almost a third of hired agricultural workers found jobs on large farms in 2003, the vast majority of Washington farms are small in terms of acres, employment, and income. Washington farms tend to be smaller in terms of acres, on average, than are farms in other states. Most of these small farms are family owned and earn very little in sales—over 50 percent earn less than \$10,000 a year in sales.



The past five years present a picture of little growth in Washington agriculture in terms of acres planted, employment, sales, or income. Apples, which remain overwhelmingly the most important product in Washington, typify this stagnation. Although prices for apples were high in 2003, intense competition in apples is forcing Washington apple growers to explore new varieties and planting techniques, as well as, to improve quality on the grocery store shelf. Opportunities remain but a trend of strong growth is unlikely.

**“Labor intensive** agriculture such as tree fruits, cherries, and asparagus are dependent on seasonal farm labor. . .”

New technology and boutique products present potential growth opportunities for some. The main new technology offering wide scale promise is bio-engineered food. Continued concerns about the health and safety of bio-engineered food, though, is likely to ensure that only large producers will be able to implement and profit from new varieties. This cost advantage for large producers for bio-engineered food may be partially offset by the advantage of very small producers in organic, fresh produce for local markets.

The ability to export effectively to foreign markets will be a determining factor in the health of Washington agriculture into the future. The export of agricultural products accounts for about a third of total income earned in agriculture nationally. Intense competition from China in some agricultural commodities will be partially offset by incredible opportunities for growth as the Chinese middle class grows.



Rising costs of doing business will confront Washington agricultural producers at the same time that they are facing increased domestic and foreign competition. Farmers will need to deal with a broad array of challenges simultaneously. While agriculture will continue to be an important industry in Washington, the emphasis will move towards lowering costs, increasing productivity, and improving crop varieties and away from ordinary measures of growth. This shift in emphasis will have long-term implications for farm viability and employee earnings.

## Appendix I

### Total Agricultural Employment in Washington State, Statewide, and by Area, 2003 (Benchmark: March 2003)

WASHINGTON STATE													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	AVG
<b>WASHINGTON</b>	61,580	68,990	74,740	80,310	86,060	118,640	132,730	109,640	121,150	119,730	70,600	59,390	91,960
<b>BELLINGHAM MSA</b>	2,650	2,770	2,970	3,040	3,390	3,620	5,590	5,390	3,510	3,090	2,890	2,880	3,480
<b>BREMERTON PMSA</b>	190	210	230	250	260	280	260	230	230	190	180	160	220
<b>OLYMPIA PMSA</b>	1,190	1,280	1,370	1,470	1,720	1,700	1,640	1,650	1,560	1,340	1,200	1,160	1,440
<b>RICHLAND-KENNEWICK-PASCO MSA</b>	6,260	7,510	8,010	10,020	11,620	18,890	15,450	12,090	14,000	13,530	7,580	6,130	10,920
<b>SEATTLE-BELLEVUE-EVERETT PMSA</b>	2,770	3,050	3,320	3,560	3,830	3,970	4,710	4,790	4,240	3,830	3,090	2,880	3,670
<b>SPOKANE MSA</b>	1,010	1,170	1,330	1,460	1,580	1,650	1,690	1,580	1,450	1,310	1,090	1,010	1,360
<b>TACOMA PMSA</b>	1,260	1,620	1,790	1,630	1,690	1,930	2,240	1,890	1,790	1,550	1,440	1,290	1,680
<b>CHELAN-DOUGLAS LMA</b>	7,580	8,410	9,090	8,610	8,770	14,070	19,390	11,660	16,320	16,480	7,690	6,470	11,210
<b>YAKIMA MSA</b>	15,460	16,750	17,560	18,770	20,260	30,420	32,800	26,690	33,630	32,130	16,330	14,590	22,950
<b>ADAMS</b>	1,500	1,680	1,890	2,230	2,430	3,150	3,960	3,470	3,350	3,520	1,940	1,480	2,550
<b>ASOTIN</b>	140	160	190	240	220	270	220	210	220	230	150	140	200
<b>CLALLAM</b>	250	260	290	300	330	350	360	360	340	290	250	240	300
<b>CLARK</b>	790	900	990	1,030	1,140	1,470	1,680	1,380	1,190	1,000	880	800	1,100
<b>COLUMBIA</b>	230	230	260	280	290	330	370	370	330	280	240	220	290
<b>COWLITZ</b>	380	390	390	510	580	810	1,210	1,080	570	430	410	370	590
<b>FERRY</b>	100	120	130	150	160	170	170	160	140	120	110	110	140
<b>GARFIELD</b>	190	210	230	240	280	300	320	350	280	220	190	190	250
<b>GRANT</b>	5,300	6,210	6,810	7,270	7,900	10,490	11,230	10,690	12,250	13,400	7,600	5,190	8,700
<b>GRAYS HARBOR</b>	290	380	410	370	400	390	370	360	340	360	290	260	350
<b>JEFFERSON</b>	90	90	100	100	100	110	100	100	100	80	70	70	90
<b>KITTITAS</b>	800	900	1,020	1,480	1,240	1,220	1,230	1,250	1,410	1,700	1,100	650	1,170
<b>KLICKITAT</b>	1,050	1,150	1,350	1,380	1,300	1,970	2,610	1,920	2,410	2,080	1,420	1,140	1,650
<b>LEWIS</b>	850	940	1,000	1,070	1,150	1,210	1,240	1,180	1,090	960	900	840	1,040
<b>LINCOLN</b>	770	870	970	1,050	1,120	1,210	1,280	1,380	1,150	960	830	770	1,030
<b>MASON</b>	250	260	270	260	300	300	190	190	180	200	190	170	230
<b>OKANOGAN</b>	3,040	3,580	3,850	4,230	4,380	6,630	8,800	5,750	7,230	9,260	4,000	2,980	5,310
<b>PACIFIC</b>	250	280	310	330	350	370	330	310	300	280	240	220	300
<b>PEND OREILLE</b>	110	130	140	150	160	180	190	170	160	130	120	110	150
<b>SKAGIT</b>	80	90	90	100	110	130	130	120	120	100	90	80	100
<b>SAN JUAN</b>	2,410	2,640	3,010	2,990	3,140	3,200	4,650	5,290	4,630	3,700	2,730	2,360	3,390
<b>SKAMANIA</b>	50	70	80	70	70	90	70	60	70	70	50	40	70
<b>STEVENS</b>	570	640	750	810	880	920	950	870	820	700	620	570	760
<b>WAHKIACUM</b>	60	70	70	80	80	90	90	90	80	70	60	60	70
<b>WALLA WALLA</b>	2,460	2,680	3,040	3,170	3,080	4,900	5,240	4,450	3,860	4,670	3,300	2,550	3,620
<b>WHITMAN</b>	1,210	1,350	1,470	1,620	1,750	1,870	1,970	2,110	1,800	1,480	1,330	1,220	1,600

*Indicated numbers include wage and salary employment as well as owners and unpaid family workers. The numbers have not been adjusted for multiple job holders (those who work for more than one employer during the reference period). Source: Employment Security Department*

## Appendix II

### Employment of Seasonal Workers by Activity in Washington, Statewide and by Agricultural Reporting Areas, 2003

WASHINGTON STATE													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>STATE TOTALS</b>	<b>9,489</b>	<b>13,531</b>	<b>16,833</b>	<b>20,529</b>	<b>21,732</b>	<b>46,693</b>	<b>56,254</b>	<b>37,628</b>	<b>46,630</b>	<b>47,028</b>	<b>13,434</b>	<b>9,758</b>	<b>28,295</b>
APPLES, TOTAL	5,199	7,687	7,659	7,901	6,320	16,914	18,549	12,764	29,491	35,312	7,602	4,773	13,348
APPLE PRUNING	4,864	7,005	4,121	2,100	933	1,290	1,983	1,128	741	511	704	2,972	2,363
APPLE THINNING	0	0	0	1,890	1,025	14,269	13,336	2,879	203	0	0	0	2,800
APPLE HARVESTER	0	0	0	0	0	49	691	5,772	26,418	32,113	3,766	0	5,734
APPLE SORT, GRADE, PACK	174	140	97	23	137	0	162	147	802	235	376	281	215
OTHER APPLE ACTIVITIES	161	542	3,441	3,888	4,225	1,306	2,377	2,838	1,327	2,453	2,756	1,520	2,236
CHERRIES, TOTAL	496	332	249	284	242	14,422	18,787	2,575	29	16	98	170	3,142
CHERRY PRUNING	486	273	151	54	14	121	0	118	0	16	58	141	119
CHERRY HARVESTER	0	0	0	0	0	11,392	13,650	949	0	0	0	0	2,166
OTHER CHERRY ACTIVITIES	10	59	98	230	228	2,909	5,137	1,508	29	0	40	29	856
PEARS, TOTAL	464	481	477	241	207	584	619	5,336	3,767	1,874	571	627	1,271
PEAR PRUNING	370	469	469	209	41	0	0	0	0	0	108	295	163
PEAR THINNING	0	0	0	16	103	467	425	114	0	0	0	0	94
PEAR HARVESTER	0	0	0	0	0	0	108	4,851	2,742	1,212	0	0	743
OTHER PEAR ACTIVITIES	94	12	8	16	63	117	86	371	1,025	662	463	332	271
OTHER TREE FRUIT WORKERS	165	171	534	467	168	387	969	1,914	1,138	157	50	87	517
GRAPE WORKERS	686	1,488	2,098	865	1,212	1,177	1,233	997	1,174	1,406	583	712	1,136
BLUEBERRY WORKERS	37	208	28	33	94	67	233	1,590	370	335	4	25	252
RASPBERRY WORKERS	378	206	304	259	305	326	2,687	1,369	1,007	743	752	524	738
STRAWBERRY WORKERS	0	0	4	17	40	1,510	3,636	52	25	0	0	0	440
BULB WORKERS	57	854	1,424	523	216	170	401	354	195	153	125	63	378
HOP WORKERS	5	37	471	436	824	313	149	213	1,438	23	33	4	329
NURSERY WORKERS	982	958	1,262	1,919	2,064	2,026	1,455	1,284	1,015	741	1,359	1,179	1,354
WHEAT/GRAIN WORKERS	23	32	60	110	154	112	460	874	193	120	54	25	185
ASPARAGUS WORKERS	0	0	495	4,592	6,744	4,253	376	29	0	0	0	0	1,374
CUCUMBER WORKERS	0	0	0	0	15	70	296	1,299	590	42	0	0	193
ONION WORKERS	485	404	354	338	94	722	972	993	669	449	276	377	511
POTATO WORKERS	300	346	645	1,015	1,125	976	1,342	2,051	2,060	2,934	1,153	665	1,218
MISC VEGETABLE WORKERS	57	138	362	694	623	1,343	2,063	1,964	2,074	1,674	342	161	958
OTHER SEASONAL WORKERS	155	189	407	835	1,285	1,321	2,027	1,970	1,395	1,049	432	366	953

WESTERN - AREA 1													
ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>TOTAL</b>	<b>1,697</b>	<b>2,535</b>	<b>3,349</b>	<b>3,027</b>	<b>3,024</b>	<b>4,065</b>	<b>9,128</b>	<b>6,951</b>	<b>4,691</b>	<b>3,479</b>	<b>2,552</b>	<b>2,039</b>	<b>3,878</b>
BLUEBERRY WORKERS	37	208	28	33	94	67	233	1,590	370	335	4	25	252
RASPBERRY WORKERS	378	206	304	259	305	326	2,687	1,369	1,007	743	752	524	738
STRAWBERRY WORKERS	0	0	4	0	26	1,456	3,339	3	25	0	0	0	404
BULB WORKERS	57	854	1,424	523	216	170	401	354	195	153	125	63	378
CUCUMBER WORKERS	0	0	0	0	15	70	296	1,299	590	42	0	0	193
POTATO WORKERS	279	288	254	214	149	122	67	61	471	661	647	450	305
MISC. VEGETABLE WORKERS	15	9	141	305	268	246	435	785	974	659	75	29	328
NURSERY WORKERS	896	845	1,027	1,484	1,709	1,414	1,298	1,035	875	693	888	913	1,090
RHUBARB WORKERS	23	106	122	158	158	125	116	99	3	8	0	0	77
OTHER SEASONAL WORKERS	12	19	45	51	84	69	256	356	181	185	61	35	113



## Appendix II

### Employment of Seasonal Workers by Activity in Washington, Statewide and by Agricultural Reporting Areas, 2003

SOUTH CENTRAL - AREA 2													
ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>TOTAL</b>	<b>3,627</b>	<b>4,436</b>	<b>4,657</b>	<b>5,901</b>	<b>6,720</b>	<b>16,101</b>	<b>14,420</b>	<b>9,576</b>	<b>13,728</b>	<b>11,946</b>	<b>2,091</b>	<b>2,377</b>	<b>7,965</b>
APPLES, TOTAL	2,477	3,043	2,074	2,181	1,944	5,496	5,507	2,782	8,009	9,575	1,078	1,221	3,782
APPLE PRUNING	2,265	2,859	1,478	1,416	419	9	478	137	0	233	259	890	870
APPLE THINNING	0	0	0	99	699	5,261	3,760	572	137	0	0	0	877
APPLE HARVESTER	0	0	0	0	0	49	263	565	6751	8,165	114	0	1,326
APPLE SORT, GRADE, PACK	169	107	58	0	119	0	162	143	575	224	376	281	185
OTHER APPLE ACTIVITIES	43	77	538	666	707	177	844	1,365	546	953	329	50	525
CHERRIES, TOTAL	266	94	120	149	170	6,888	6,176	613	0	16	18	31	1,212
CHERRY PRUNING	262	65	68	0	3	0	0	118	0	16	18	31	48
CHERRY HARVESTER	0	0	0	0	0	4,443	2,939	0	0	0	0	0	615
OTHER CHERRY ACTIVITY	4	29	52	149	167	2,445	3,237	495	0	0	0	0	548
PEARS, TOTAL	315	353	338	195	183	74	418	3,082	2,455	915	534	560	785
PEAR PRUNING	315	349	338	176	41	0	0	0	0	0	108	265	133
PEAR THINNING	0	0	0	16	103	74	281	105	0	0	0	0	48
PEAR HARVESTER	0	0	0	0	0	0	108	2,758	2,074	358	0	0	442
OTHER PEAR ACTIVITIES	0	4	0	3	39	0	29	219	381	557	426	295	163
OTHER TREE FRUIT, TOTAL	85	127	424	378	32	296	310	1,171	643	5	18	0	291
OTHER TREE FRUIT PRUNER	74	120	357	31	0	0	0	0	0	0	14	0	50
OTHER TREE FRUIT HARVESTER	0	0	0	0	0	172	229	1,171	637	0	0	0	184
OTHER TREE FRUIT ACTIVITIES	11	7	67	347	32	124	81	0	6	5	4	0	57
GRAPES, TOTAL	453	744	1,051	462	466	668	360	315	486	697	211	429	529
GRAPE PRUNING	375	699	1,004	180	0	0	0	0	0	0	129	392	232
GRAPE HARVESTER	0	0	0	0	0	0	0	0	320	542	0	0	72
OTHER GRAPE ACTIVITY	78	45	47	282	466	668	360	315	166	155	82	37	225
ASPARAGUS WORKERS	0	0	43	1,458	2,640	1,296	362	26	0	0	0	0	485
HOPS, TOTAL	0	26	452	384	703	277	137	200	1,181	23	33	4	285
HOP TWI NING & TRAINING	0	0	35	250	630	190	0	0	0	0	0	0	92
HOP HARVESTER	0	0	0	0	20	0	0	0	613	0	0	0	53
OTHER HOP ACTIVITY	0	26	417	134	53	87	137	200	568	23	33	4	140
ONION WORKERS	0	0	24	152	14	321	74	418	129	0	0	0	94
POTATO WORKERS	0	0	11	0	0	6	223	343	63	8	0	0	55
MISC. VEGETABLE WORKERS	19	23	56	169	57	287	505	256	417	380	145	132	204
OTHER SEASONAL WORKERS	12	26	64	373	511	492	348	370	345	327	54	0	244

NORTH CENTRAL - AREA 3													
ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>TOTAL</b>	<b>1,547</b>	<b>2,779</b>	<b>3,784</b>	<b>4,694</b>	<b>3,379</b>	<b>9,578</b>	<b>18,155</b>	<b>8,485</b>	<b>12,798</b>	<b>13,469</b>	<b>4,591</b>	<b>2,670</b>	<b>7,161</b>
APPLES, TOTAL	1,351	2,459	3,508	4,486	3,236	4,076	7,037	4,162	11,601	12,382	4,440	2,421	5,097
APPLE PRUNING	1,286	2,271	992	259	113	89	75	286	105	11	29	1,029	545
APPLE THINNING	0	0	0	1,791	248	3,523	5,881	280	0	0	0	0	977
APPLE HARVESTER	0	0	0	0	0	0	415	2,880	10,952	11,364	2,187	0	2,317
APPLE SORT, GRADE, PACK	5	33	39	23	18	0	0	4	227	11	0	0	30
OTHER APPLE ACTIVITIES	60	155	2,477	2,413	2,857	464	666	712	317	996	2,224	1,392	1,228
CHERRIES, TOTAL	107	167	85	55	20	4,881	10,740	1,851	29	0	41	84	1,505
CHERRY PRUNING	107	159	73	0	0	9	0	0	0	0	9	74	36
CHERRY HARVESTER	0	0	0	0	0	4,550	8,930	838	0	0	0	0	1,193
OTHER CHERRY ACTIVITIES	0	8	12	55	20	322	1,810	1,013	29	0	32	10	276

## Appendix II

### Employment of Seasonal Workers by Activity in Washington, Statewide and by Agricultural Reporting Areas, 2003

#### NORTH CENTRAL - AREA 3 (Continued)

ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
PEARS, TOTAL	55	128	139	46	24	410	150	2,254	989	938	37	30	433
PEAR PRUNING	55	120	131	33	0	0	0	0	0	0	0	30	31
PEAR THINNING	0	0	0	0	0	393	144	9	0	0	0	0	46
PEAR HARVESTER	0	0	0	0	0	0	0	2,093	668	854	0	0	301
OTHER PEAR ACTIVITIES	0	8	8	13	24	17	6	152	321	84	37	0	56
OTHER TREE FRUIT WORKERS	28	25	48	11	37	75	163	116	17	82	32	80	60
OTHER SEASONAL WORKERS	6	0	4	96	62	136	65	102	162	67	41	55	66

#### COLUMBIA BASIN - AREA 4

ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>TOTAL</b>	<b>1,706</b>	<b>1,802</b>	<b>1,943</b>	<b>2,189</b>	<b>2,490</b>	<b>5,413</b>	<b>6,160</b>	<b>5,112</b>	<b>7,863</b>	<b>9,543</b>	<b>3,088</b>	<b>1,634</b>	<b>4,079</b>
APPLES, TOTAL	1,084	1,410	1,234	888	733	3,632	2,957	3,081	5,694	7,658	1,969	990	2,611
APPLE PRUNING	1,031	1,112	893	238	136	0	342	350	368	267	393	916	504
APPLE THINNING	0	0	0	0	10	3,058	2,225	1,577	66	0	0	0	578
APPLE HARVESTER	0	0	0	0	0	0	0	605	4,872	7,001	1,419	0	1,158
OTHER APPLE ACTIVITIES	53	298	341	650	587	574	390	549	388	390	157	74	371
CHERRIES, TOTAL	19	41	27	54	20	164	1,177	111	0	0	0	19	136
CHERRY PRUNING	13	19	6	45	11	0	0	0	0	0	0	0	8
CHERRY HARVESTER	0	0	0	0	0	154	1,111	111	0	0	0	0	115
OTHER CHERRY ACTIVITIES	6	22	21	9	9	10	66	0	0	0	0	19	14
PEAR WORKERS	94	0	0	0	0	100	51	0	323	21	0	37	52
MINT WORKERS	0	6	32	46	172	152	7	216	21	0	0	0	54
OTHER TREE FRUIT WORKERS	0	0	38	15	63	0	119	67	0	0	0	0	25
ASPARAGUS WORKERS	0	0	124	243	459	94	14	0	0	0	0	0	78
ONION WORKERS	323	217	101	77	80	86	114	95	219	135	73	191	143
POTATOES, TOTAL	21	58	195	505	525	501	550	474	1,227	1,574	434	150	518
POTATO HARVESTER	0	0	0	0	0	0	5	19	95	56	0	0	15
POTATO SORT, GRADE, PACK	3	4	77	159	298	351	390	271	600	728	267	121	272
OTHER POTATO ACTIVITIES	18	54	118	346	227	150	155	184	532	790	167	29	231
MISC VEGETABLE WORKERS	0	0	13	13	23	133	220	303	49	26	4	0	65
WHEAT/GRAIN WORKERS	0	0	4	4	8	7	65	200	13	7	3	0	26
NURSERY WORKERS	83	68	91	262	187	490	92	191	86	29	428	232	187
OTHER SEASONAL WORKERS	82	2	84	82	220	54	794	374	231	93	177	15	184

## Appendix II

### Employment of Seasonal Workers by Activity in Washington, Statewide and by Agricultural Reporting Areas, 2003

SOUTH EASTERN - AREA 5													
ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Avg
<b>TOTAL</b>	<b>866</b>	<b>1,908</b>	<b>2,835</b>	<b>4,404</b>	<b>5,751</b>	<b>11,122</b>	<b>7,738</b>	<b>6,580</b>	<b>7,192</b>	<b>8,431</b>	<b>1,042</b>	<b>992</b>	<b>4,905</b>
APPLES, TOTAL	287	775	843	346	407	3,710	3,048	2,739	4,187	5,697	115	141	1,858
APPLE PRUNING	282	763	758	187	265	1,192	1,088	355	268	0	23	137	443
APPLE THINNING	0	0	0	0	68	2,427	1,470	450	0	0	0	0	368
APPLE HARVESTER	0	0	0	0	0	0	13	1,722	3,843	5,583	46	0	934
OTHER APPLE ACTIVITIES	5	12	85	159	74	91	477	212	76	114	46	4	113
CHERRIES, TOTAL	104	30	17	26	32	2,489	694	0	0	0	39	36	289
CHERRY PRUNING	104	30	4	9	0	112	0	0	0	0	31	36	27
CHERRY HARVESTER	0	0	0	0	0	2,245	670	0	0	0	0	0	243
OTHER CHERRY ACTIVITIES	0	0	13	17	32	132	24	0	0	0	8		21
OTHER TREE FRUIT WORKERS	52	19	24	63	36	16	377	560	478	70	0	7	142
GRAPE WORKERS	233	744	1,047	403	746	509	873	682	688	709	372	283	607
ASPARAGUS WORKERS	0	0	328	2,891	3,645	2,863	0	3	0	0	0	0	811
HOP WORKERS	5	11	19	52	121	36	12	13	257	0	0	0	44
ONION WORKERS	162	187	229	109	0	315	784	480	321	314	203	186	274
POTATOES, TOTAL	0	0	185	296	451	347	502	1,173	299	691	72	65	340
POTATO HARVESTER	0	0	0	0	0	0	37	59	61	15	0	0	14
POTATO SORT, GRADE, PACK	0	0	43	143	368	322	420	970	164	374	0	11	235
OTHER POTATO ACTIVITIES	0	0	142	153	83	25	45	144	74	302	72	54	91
MISC VEGETABLE WORKERS	0	0	30	49	117	552	787	521	631	601	118	0	284
WHEAT/GRAIN WORKERS	12	10	14	17	25	21	48	48	16	35	16	7	22
NURSERY WORKERS	0	7	4	4	8	3	4	4	6	5	8	6	5
STRAWBERRY WORKERS	0	0	0	17	14	54	297	49	0	0	0	0	36
OTHER SEASONAL WORKERS	11	125	95	131	149	207	312	308	309	309	99	261	193

EASTERN - AREA 6													
ACTIVITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
<b>TOTAL</b>	<b>46</b>	<b>71</b>	<b>265</b>	<b>314</b>	<b>368</b>	<b>414</b>	<b>653</b>	<b>924</b>	<b>358</b>	<b>160</b>	<b>70</b>	<b>46</b>	<b>307</b>
WHEAT/GRAIN, TOTAL	11	22	42	89	121	84	347	626	164	78	35	18	136
WHEAT/GRAIN HARVESTER	0	0	0	0	0	0	17	12	0	0	0	0	2
WHEAT/GRAIN EQPMT OPERATOR	0	11	21	56	55	37	96	530	164	65	14	0	87
OTHER WHEAT/GRAIN ACTIVITY	11	11	21	33	66	47	234	84	0	13	21	18	47
NURSERY WORKERS	3	38	140	169	160	119	61	54	48	14	35	28	72
OTHER SEASONAL WORKERS	32	11	83	56	87	211	245	244	146	68	0	0	99

---

---

# GLOSSARY

**Crop/Livestock Activities** - Names of agricultural crops or livestock activities going on during the survey. Some activity examples are: apple harvesting, apple pruning, asparagus cutting, cherry picking, potato packing, vegetable weeding, etc.

**Hired Workers** - All hired workers including full-time, part-time, seasonal, and casual employees regardless of age. Paid family members are considered hired workers.

**Seasonal Hired Workers** - All hired workers employed less than 150 calendar days.

**Foreign Contract Workers** - All hired workers who reside in foreign countries and are legally contracted by farmers to work temporarily in the United States. Foreign hired farmhands are always considered seasonal workers—even if hired for more than five months of work.

**Local Worker** - Hired worker who daily commutes from home to the job.

**Intrastate Migratory Workers** - Hired workers whose established residence is within Washington, but who is not within commuting distance of the job.

**Interstate Migratory Workers** - Hired workers whose established residence is outside Washington and not within commuting distance of the job.

**Agricultural Employment** - Any service or activity defined as agricultural employment in the Fair Labor Standards Act and in the Internal Revenue Code of 1954. In addition, the handling, planting, drying, packing, packaging, processing, freezing, or grading prior to delivery for storage of any agricultural or horticultural commodity in its un-manufactured state are also considered agricultural employment.

**Migrant Agricultural Worker** - A person employed in agricultural work of a seasonal or other temporary nature who is required to be absent overnight from his or her permanent place of residence. Exceptions are immediate family members of an agricultural employer or a farm labor contractor, and temporary foreign workers. Temporary foreign workers are nonimmigrant aliens authorized to work in agricultural employment in the United States for a specified time period, normally less than 1 year.)

**Seasonal Agricultural Worker** - A person employed in agricultural work of a seasonal or other temporary nature who is not required to be absent overnight from his or her permanent place of residence. Such a worker is covered by MSPA when the worker is performing fieldwork, or when the worker is employed in a packing or processing operation and is transported by day haul. The same exceptions listed above for migrant agricultural workers apply here.

**Migrant Seasonal Farm Worker (MSFW)** - A worker defined as both a migrant and seasonal farm worker.