Executive Summary

This study calculates the economic effects of the Washington State tree fruit industry on both the state and the eight most important tree fruit-producing counties in the state. The tree fruit industry is the largest single component of Washington State’s large agricultural production sector. Direct production of all agricultural products amounted to approximately 1.5% of Washington’s economy in 2008. Over recent years, tree fruit sales have amounted to approximately 30% of total agricultural product sales in the state. Apples dominate the mix, with over 72% of the value of tree fruit production in 2009. Cherries run second, with 13.7% share in 2009, with pears third, at 10% share of all tree fruit in 2009.

This study gives an analytical snapshot of the full effects of the industry in the most recent calendar years for which detailed data are available. These are 2007 through 2009. Initial descriptive statistics for both the state and relevant counties include an estimate of the size of the economy, the relative size of agriculture in that economy and the role of tree fruit in the agricultural sector. The eight counties considered are: Benton, Chelan, Douglas, Franklin, Grant, Okanogan, Walla Walla and Yakima. Data at the county level are from 2007, since that is the most recent year for which USDA-provided information is available. The industry analyzed consists solely of the growers themselves.

The analysis uses an input-output framework, specifically, the state and county models and data sets provided by the Minnesota IMPLAN Group. An input-output model adds the effects of additional rounds of spending to the known levels of an initial or direct activity. These effects include industry-to-industry (indirect) spending as well rounds of consumer (induced) spending. The results are expressed as total levels. Multipliers are the ratio of total to direct effects.

Model results include measurements of total jobs, labor income, output (sales) and value added. The last measure sums, over each stage of the production process, the difference between the selling price and the cost of all inputs. Value added serves as the basis of national accounting, such as gross domestic product (GDP), and is the preferred measure of economic effect in the study. By definition, it is less than output (sales) and greater than labor income. Job results contain both full- and part-time jobs. In addition, the study presents the estimated total taxes raised by the industry to the state and county jurisdictions. Finally, for each county and for the state, a list of industries most affected by tree fruit production is presented.

The study did not rely on the IMPLAN data set for agricultural data. Instead, they came from two primary sources, the USDA and the Labor Markets Economic Analysis division of the Washington state department of Employment Security (LMEA). Considerable time was spent isolating the effect of tree fruit from all fruit farming to arrive at series for final sales, job and total wages that reflect only activities in Washington state orchards.

Due to the high variability in tree fruit markets for the three study years, Washington State results are presented as an average. Individual
year results are available in Appendix C. For the three years, initial value added contributed to the Washington economy by the industry amounted to $1.1 billion, on average. This led to a total effect of nearly $1.95B in value added per year, on average, to the state economy. The total effect of the industry implies a share of about 0.6% of the state GDP in the years 2007 through 2009.

The average number of state-wide jobs associated with the industry were over 43,300 directly and 59,400 total. Depending on the measure, implied multipliers fall in the range of 1.37-1.88. Average annual state and local taxes raised by the industry state-wide amount to approximately $114.4M. Over half of this sum consists of sales taxes and about a quarter of the sum is made up by property taxes. As measured by value added, the top industries most affected by tree fruit production state-wide were: support activities for agriculture, real estate establishments, the imputed value of owner-occupied dwellings, wholesale trade, banks/credit unions and the offices of physicians, dentists and other ambulatory health care providers. Support activities for agriculture in this context consists of firms offering pre-harvest services, such as spraying and pruning, as well as those providing post-harvest activities, such as pre-cooling, sorting, grading, and packing.

Tree fruit farming in Benton County ranked as the eleventh-largest among all private industries of the county economy. As a share of the value of agricultural output, tree fruit in the county amounted to 26% in 2007. Direct value added by tree fruit was about $82M, while calculated total value added was approximately $114M, or 1.8% of Benton County GDP of that year. Nearly 2,100 county jobs were directly tied to the tree fruit industry, with over 3,000 attributable to the industry once the total effects of the model were included. Total state and local taxes raised by the tree fruit industry were slightly more than $5.69M in 2007. The top five industries in the county affected by the tree fruit industry were identical to those for the state-wide analysis. This was the case for all the counties considered.

Chelan County’s fruit industry placed sixth among all private industries in the county by value added in 2007. In contrast to Benton County, nearly all Chelan County’s agricultural sector is attributable to the tree fruit industry. Tree fruit production contributed approximately $122M directly, and via the model calculations, nearly $194M by total value added, or about 7.3% of Chelan County GDP in that year. Over 7,200 county jobs were directly tied to the tree fruit industry, with nearly 9,100 attributable to the industry once the total effects of the model were included. Total state and local taxes raised by the tree fruit industry were nearly $10.8M. The top industries affected by the tree fruit industry were the same as the state, with the addition of the locally-owned electric utility.

In Douglas County, fruit farming ranked first among all private industries in 2007. Tree fruit production makes up the entire category of fruit farming. Indeed, tree fruit production has consistently composed 75% of the market value of all agriculture output in the county over the past 15 years. The industry tallied over $87M in direct value added and via model calculation, nearly $118M in total value added in 2007. This represented over 18% of Douglas County’s GDP in that year. Nearly 2,700 jobs were directly attributable in the industry, while 3,600 were tied to the industry, in total, for 2007. Total state and local taxes attributable to the tree
fruit industry were about $6.0M. County industries most affected by the tree fruit industry were the same as in Chelan County.

Tree fruit farming in Franklin County came in fifth among all private industries in 2007, by value added. Due to the county’s diversified agricultural sector, tree fruit production was 22% of the total market value of agriculture in that year. Tree fruit production, nonetheless, has increased several-fold over the past 15 years in the county. In 2007, direct value added from tree fruit production amounted to about $61M, while total value added was calculated at approximately $85M, or about 4.7% of county GDP. The number of direct jobs in tree fruit farming was nearly 3,000, while the calculated total number tied to the industry was about 3,550. Total state and local taxes attributable to the tree fruit industry were slightly less than $4.6M. The industries most affected by tree fruit production were the same in Franklin as they were in other counties.

Grant County’s fruit farming industry was the largest among all private industries in 2007 in the county, by value added. Between 1992 and 2007, tree fruit production rose by over 200% and represented 28% of the market value of agricultural production in the county in the latter year. In 2007, direct value added created by the tree fruit industry was nearly $202M while total value added was calculated at approximately $255M, or 10.7% of county GDP. In that year, the number of jobs directly associated with Grant County fruit production was nearly 5,300 while the total number of jobs associated with the industry in the county was over 6,800. Total state and local taxes attributable to the tree fruit industry were $12.9M in 2007. The list of industries most affected by tree fruit production was the same as in the state, with the exception of a high ranking of wholesale trade, likely influenced by tree fruit and vegetable production in the county.

As in Grant County, fruit farming was the largest single private industry in Okanogan County in 2007, by value added. Tree fruit represented all fruit farming in the county. Tree fruit also led the agricultural sector, with a share of market value in 2007 equal to 22%. Over the 15 years covered by the most recent USDA Censuses of Agriculture, the market value of tree fruit production increased, in nominal terms, by about 50%. In 2007, the tree fruit industry directly gave rise to $105M in value added, and the total effects of this activity meant about $153M in value added. This represented 14.1% of the county’s GDP. The number of direct jobs associated with Okanogan tree fruit growing was nearly 5,200 in 2007, while the total number of jobs attributable to the industry was calculated at nearly 6,800. Total state and local taxes raised by tree fruit growing were estimated at approximately $8.5M. The list of most affected industries was similar to those in Grant County.

Tree fruit production in Walla Walla County has grown rapidly over the past decade. Because of rapid change, no comparisons can be made between 2007 and prior agricultural censuses. For 2007, the value of tree fruit production was nearly 30% of all agricultural production in the county. As measured by direct value added, tree fruit production was the sixth-largest industry in the county of that year. Direct value added of nearly $60M led to total effect of nearly $85M. Jobs directly engaged in tree fruit production were over 2,250 while total jobs associated with the industry were nearly 2,850. Total state and local taxes raised from industry
activities were approximately $4.5M in 2007. The list of top industries affected by tree fruit production was the same as in the other counties, with the addition of electrical transmission and distribution companies.

**Yakima County** is the county with the highest tree fruit production in the state. Among all private sector industries, fruit farming ranked third in the county economy in 2007. Tree fruit farming represented over 90% of all fruit farming in that year. Tree fruit production has consistently claimed slightly over 40% of the value of all agricultural sales over the span of 15 years considered. Over that same period, the nominal value of the industry in the county has gone up over 80%. In 2007, Yakima County tree fruit created about $314M in value added; when total effects are calculated, the industry made up $488M in value added, or 7.7% of county GDP. Similarly, nearly 12,500 jobs were directly tied to tree fruit growing in 2007, and about 17,000 jobs attributable to the industry in all. Total state and local taxes arising from the industry’s activities were estimated at $27.1M. Top affected industries by the tree fruit industry were similar to those in other counties, with the addition of private hospitals.

Clearly, tree fruit production is a dominant industry in these counties and in Washington State’s agricultural economy. By total value added, its share of the economy in the eight largest producing counties ranges from 1.8% (Benton) to 18.4% (Douglas). It has also been a growth industry, with sales nearly doubling between 2000 and 2008 to about $2.5B in nominal terms before falling to $1.8B in 2009.

The usual caveats to input-output modeling apply to this study. First, the model calculations represent only one or three years, and thus are snapshots of the Washington tree fruit industry. Second, the model does not allow for input substitutions that may occur over time, say machinery for labor. Third, the interpretation of total effects must be taken with care; their size is dependent on the assumption that only the tree fruit industry experiences growth, whereas in reality in any regional economy industries are all growing at some rate. Given the dynamism of the industry, a subsequent study would be highly informative, once the 2012 USDA Census of Agriculture is available.