



Washington State
Tree Fruit Association

Water Supply Impacts

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The Big Apple

- \$5.85 billion in value after packing
- \$8.87 billion in total economic impact
- 46,385 direct jobs (orchard to packing)
 - \$1.63 billion in total annual compensation
- 22,020 indirect jobs (transportation, suppliers)
 - \$1.29 billion in total compensation
- 68,405 total Washington jobs tied to apples

(Economic Impact Study of the 2019-20 Apple Crop, Globalwise)

This is the Place

- More than 60% of all U.S. Apples produced in Washington state, 68% of the fresh apples.
- 97% of the nation's organic apples are produced here (16% of 2024 WA crop).
- 28% are exported in 2023-24 (22% in 2022-23)
- our quality is in high demand if available.
- Even to China, which is number one at 8 times U.S. apple production.

Special Considerations

- Many specialty crops are evaluated and priced on quality over quantity.
- Water is also a critical tool to manage extreme temperatures.
 - Frost protection
 - Evaporative cooling
- Water reliability is critical to ensuring crop quality and survival of perennial crop investments.

Apples to Apples

<u>Variety</u>	<u>Size</u>	<u>Cars</u>	<u>Avg</u>	<u>Min</u>	<u>Max</u>	<u>Variety</u>	<u>Size</u>	<u>Cars</u>	<u>Avg</u>	<u>Min</u>	<u>Max</u>
Red Delicious	72 and larger	34.2	\$24.70	\$14.00	\$66.25	WA38	72 and larger	22.8	\$39.35	\$18.97	\$67.85
	80 to 88	48.9	\$23.04	\$12.10	\$53.60		80 to 88	7.0	\$38.94	\$28.95	\$53.33
	96 to 100	44.7	\$21.46	\$15.75	\$33.91		96 to 100	1.6	\$44.19	\$26.95	\$60.00
	113	51.5	\$20.10	\$15.00	\$30.08		113	0.5	\$60.00	\$60.00	\$60.00
	120 to 125	34.9	\$18.72	\$12.25	\$32.64		120 to 125	1.0	\$57.67	\$56.89	\$60.00
	138 and smaller	77.9	\$18.68	\$9.86	\$42.89		138 and smaller	19.6	\$41.58	\$9.31	\$61.58
Golden Delicious	72 and larger	9.7	\$34.67	\$15.65	\$49.35	Ambrosia	72 and larger	15.7	\$26.34	\$14.75	\$34.45
	80 to 88	12.8	\$32.63	\$19.75	\$50.95		80 to 88	8.9	\$26.11	\$19.00	\$37.95
	96 to 100	11.2	\$28.73	\$18.10	\$40.80		96 to 100	1.6	\$18.49	\$15.65	\$20.43
	113	6.0	\$24.49	\$17.75	\$34.90		113	1.0	\$17.14	\$16.52	\$18.26
	120 to 125	2.9	\$23.06	\$14.70	\$40.95		120 to 125	1.4	\$16.64	\$15.60	\$22.61
	138 and smaller	5.4	\$21.24	\$12.00	\$41.36		138 and smaller	2.0	\$30.81	\$23.89	\$32.80
Granny Smith	72 and larger	62.4	\$29.24	\$15.70	\$64.35	Cripps Pink	72 and larger	19.4	\$29.62	\$14.00	\$44.85
	80 to 88	64.1	\$28.65	\$16.00	\$58.95		80 to 88	15.5	\$29.79	\$17.25	\$44.00
	96 to 100	53.8	\$24.81	\$16.70	\$48.95		96 to 100	11.9	\$23.94	\$16.00	\$36.00
	113	35.9	\$24.90	\$17.10	\$46.22		113	5.5	\$23.66	\$17.85	\$36.95
	120 to 125	14.3	\$22.26	\$15.60	\$46.22		120 to 125	2.5	\$25.36	\$15.90	\$32.70
	138 and smaller	100.6	\$26.14	\$11.00	\$75.26		138 and smaller	33.6	\$27.86	\$11.00	\$44.74
Fuji	72 and larger	56.2	\$26.91	\$11.10	\$46.00	Honeycrisp	72 and larger	116.7	\$36.82	\$10.00	\$75.95
	80 to 88	40.9	\$24.68	\$13.91	\$44.00		80 to 88	42.4	\$33.31	\$10.65	\$63.00
	96 to 100	14.0	\$23.90	\$11.10	\$36.95		96 to 100	8.9	\$25.65	\$8.00	\$50.00
	113	8.6	\$23.17	\$14.00	\$42.95		113	7.8	\$31.12	\$10.70	\$50.56
	120 to 125	6.3	\$23.87	\$13.70	\$42.95		120 to 125	8.2	\$39.10	\$12.65	\$58.77
	138 and smaller	34.9	\$27.31	\$8.48	\$58.89		138 and smaller	77.7	\$36.89	\$7.02	\$69.92

Climate of Uncertainty

- Many irrigation systems have storage to manage the runoff of winter snowpack.
- Modest changes in the amount and timing of winter precipitation that comes as rain or snow can impact supply in these systems.
- Orchards have on-farm frost control ponds to ensure early season supply, and increasingly to manage during rationing.
 - \$130,000 for pond serving a 50-acre block (WSU)
- Lifecycle Carbon Assessment for WA apples.

Made in the Shade



Good Fruit Grower

Conservation and Change

- Shade cloth can reduce sunburn damage.
 - \$10,000 per acre at establishment or \$14,000 to retrofit, plus annual labor costs to move.
 - Water cooling still needed at higher temperatures
- Conventional overhead sprinklers for hydro-cooling use about 40 gpm/ac
- Evaporative reduces usage from 40 gpm/ac to 30 gpm/ac
- Misters or foggers use 15-10 gpm/ac
- Unused water results in lost water rights.

Water Quality

- Food Safety Modernization Act (2010) created new requirements to prevent foodborne illness.
- This includes a requirement to ensure the safety of water that comes into direct contact with produce.
- FDA initially proposed an ongoing water testing requirement, but the final rule approved this year mandates a risk assessment for “foreseeable hazards” and subsequent mitigation.

Domestic Water

- A robust labor market has led to chronic labor shortages in seasonal agriculture. This gap is being increasingly filled by the H-2A guest worker program.
 - 2,092 jobs approved for WA in 2009
 - 38,644 jobs in WA in 2023
- Employers are required to provide housing at no cost to the employee.
 - Competition for in-city lots/units
 - Expansion of on-farm housing at same or proximate sites may trigger a review by Ecology under Campbell-Gwinn to ensure “project” is under the 5,000gpd exemption threshold
 - May require change of use or transfer

Adjacent Issues

- The Climate Commitment Act provided an ag exemption. Ecology doesn't know how to implement it, so growers continue to pay .40-.60 cents more per gallon.
- LNI Heat Exposure Rule requires ongoing monitoring of temperature, mandated breaks, and tracking of employee-initiated breaks.
- Reduced bulk capacity on the river system strains limited truck and rail capacity.

Conclusions

- Washington orchards and farms are already adapting to constraints on water supply, timing, and quality.
- Other economic and climate changes are adding to these demands on the resource.
- Adaptation costs are significant and drive consolidation and acquisition by institutions.
- Washington's water supply and productive agricultural lands will be an increasingly scarce and valued resource.



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