Washington

(Historical Essay on Agriculture and Rural Life)

Provided by University of Washington / Washington State University (no author attribution) as part of "Preserving the History of United States Agriculture and Rural Life: State and Local Literature, 1820-1945. Phase VI 2006-2008. A proposal submitted to the National Endowment for the Humanities, Division of Preservation and Access on behalf of the United States Agricultural Information Network"

2003

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Washington is divided into two distinct climates and regions separated by the Cascade Mountains. Western Washington's mild climate was dominated by the temperate forests of the Olympic peninsula and the Puget Sound basin. In contrast, the more extreme climate of eastern Washington was defined by grassland. Only the semi-navigable Columbia River connected east and west.

The different cultures of early inhabitants reflected these distinct regional climates. American Indians west of the Cascades—where fish, game, and other food sources were readily available—lived in coastal villages made up of large cedar buildings. Indians east of the Cascades, on the other hand, resided in circular dwellings made of woven mats and brush attached to a pole framework, mobile structures that enabled them to move between seasonal hunting, fishing, and gathering places. Despite these and other cultural differences, both groups relied on salmon. Salmon was central to Indian diet and culture on both sides of the Cascades, at once serving as food, currency, and icon.

Demographic shifts in the Northwest caused rapid environmental change in the late nineteenth century. Forced removal and deaths through disease led to a 95 percent decline in the number of Indians in the Pacific Northwest, while the number of white settlers skyrocketed to more than 1.1 million by 1900. In 1889 Washington became a state in part because of increased migrations and economic development brought on by the completion of the Northern Pacific Railway in 1883. Trapping, fishing, farming, logging, mining, irrigation, and industrialization, in turn, reshaped salmon habitat and the environment.

Commercial agriculture in Washington state can be traced back to the Hudson Bay Company's establishment of Fort Vancouver in 1824. To meet the North American director's insistence that the company be self-sufficient, Fort Vancouver raised livestock, cultivated land, and planted orchards to supply food for the fort and for other HBC fur-trading posts. In 1839 the HBC created an agricultural subsidiary, the Puget Sound Agricultural Company (PSAC), to produce food and supplies for the HBC's Northwestern trading posts on two large farms in the south Puget Sound region.

As Washington's white settler population increased, so did the number of farms. In 1860 there were 1,330 farms, almost all in western Washington. By 1870 the number of farms more than doubled, with most farms less than 50 acres. Leading crops were potatoes, oats, and wheat; livestock was predominantly sheep and cattle. Although most of the farms were in western Washington, 653 were now concentrated in Walla Walla County, east of the Cascades.

By 1880 the number of farms doubled again to 6,529. In western Washington, some small farms were established on cut-over timberlands but, in general, farming had begun moving eastward. Farms were now evenly split between western and eastern Washington and agriculture shifted from livestock to crops. By 1890 the number of farms tripled to 18,056, 60 percent of them in eastern Washington. Most families earned their primary income outside of the farm by logging, mining, or other work but some agricultural specialization occurred. Western Washington farms

averaged 120 to 150 acres and focused on potatoes, hops, market garden produce, and milk. In contrast, eastern Washington farms were larger, averaging almost 300 acres. Cattle and sheep grazed on open ranges but wheat emerged as the dominant crop. Conspicuously absent from both sides of the Cascades were the cornfields and swine typical of the Mississippi and Ohio valleys.

With the construction of railroads, agriculture expanded beyond the Walla Walla region in eastern Washington as farmers were able to transport their grain to market. By the mid-1880s, the Palouse and Walla Walla Valley produced 7.5 million bushels of wheat per year. By 1910, wheat represented 44.5 percent of the value of all Washington crops and flour milling ranked second only to lumbering among Washington's industrial enterprises.

Wheat cultivation in Washington differed significantly from that of the Great Plains. Varied rainfall and topography led farmers to experiment with more crop varieties to match their microclimates. The establishment of the State Agricultural College in Pullman in 1892 aided the search for the best regional varieties. The hilly terrain also affected the pace of mechanization, since neither steam engines nor horse-drawn combines proved easily adaptable to hillside work. It was only in the twentieth century that gas-powered tractors replaced the use of horses. Another major difference between Washington and the Midwest was the method of storage and shipping. Instead of grain elevators for bulk storage, eastern Washington farmers stored grain in sacks, partly because they believed that sack storage decreased the spread of smut. Bulk storage also threatened the sea-worthiness of vessels bound for Europe.

In addition to railroads, the expansion of wheat regions depended on expensive and difficult irrigation. Early irrigation efforts focused on tributaries such as the Yakima River, areas where residents concentrated on stock raising. Beginning with modest canals in 1868, over 40,000 acres were irrigated in Yakima and Kittitas counties within two decades. In 1890, the Northern Pacific Railway created a subsidiary to develop the Sunnyside district along the river below Yakima, aiming to sell reclaimed land at much higher prices. The subsidiary, after an initial failure, reorganized as the Washington Irrigation Company. By 1904 the Sunnyside project had irrigated 36,000 acres, the largest reclamation system in the Pacific Northwest. Similarly, the Great Northern Railway promoted the development and irrigation of the Wenatchee valley, which was second only to Yakima in irrigated acreage by the early twentieth century.

Irrigation transformed, expanded, and diversified Washington agriculture. The federal government greatly improved irrigation farming by providing technical, financial, and educational assistance. The United States Reclamation Service launched the Okanogan, Wapato, and Tieton irrigation projects and expanded the private Sunnydale initiative through the National Reclamation Act of 1902. The resulting irrigated land was the most expensive farmland in Washington and farmers could only afford to buy and cultivate small tracts of land. Farmers near Yakima, Wenatchee, Chelan and Okanogan, thus, turned to apples over wheat, a crop that enabled substantial profits from small orchards. During a period known as "apple fever" in 1908, Washington planted at least one million apple trees, quickly becoming the leading producer of apples in the nation by 1917. In the Kittitas and lower Yakima valleys, where the cost of water was cheaper, farmers grew alfalfa, hay, potatoes, and sugar beets. With improved transportation, including highway travel, these new agricultural areas gained prominence.

A growing urban population in Washington also diversified the state's agriculture. Truck gardeners in the Puyallup and White River valleys, for example, raised vegetables for neighboring cities. In Seattle, commission houses acted as middlemen between the 3,000 King County farmers and their customers. Both farmers and consumers soon tired of the middlemen, whom they blamed for artificially high prices and other unfair practices, and began circumventing the commission houses by meeting informally along Western Avenue. Seattle's City Council, in turn, authorized a public market at Pike Place, an instant success that led to the construction of the first farmer's market building in 1907. More than 120 farmers, 70-80 percent Japanese and the remainder mostly Italian, sold their produce directly to customers in covered stalls.

In addition to producing for local urban markets, Washington developed other specialty crops that could compete in outside markets, despite relatively high transportation costs. The La Conner flats grew such perfect cabbages and vegetables that they were sold for seed throughout the country. Berries and fruits were the other major high-yield, high-quality crops.

Dairy farming also expanded to serve both local and regional markets. Milk, cream, and butter were sold to nearby cities. In 1899, the Pacific Coast Condensed Milk Company produced the first cases of evaporated milk, called "Carnation Sterilized Cream." Within two years, the company changed its name to the Carnation Milk Company and produced 40,000 pounds of condensed milk per day. Carnation's advertising agency soon immortalized the "contented cows" of Washington state.

World War I brought prosperity to Washington farmers, many of whom expanded their acreage and purchased equipment. The war also encouraged agricultural cultivation on less-productive farmlands, particularly of wheat because of its inflated prices. Peace, however, reduced agricultural prices, farm incomes, and ultimately, land values. Fruit growers encountered shrinking markets, as did dairy farmers with the curtailment of condensed milk production. In response, farmers increasingly turned to specialty crops and cooperative organizations to market their products. Producer organizations were established for wheat, fruit, poultry, and dairy products that provided storage, standard grades and varieties, packaging and processing techniques, and wider distribution systems. Agricultural experiment stations also lent guidance through education and technical programs and publications. Despite all these fluctuations and changes, more than two thirds of agricultural income still came from wheat and apples in 1930. The production of peas, spinach, soft fruits and berries, eggs, and poultry contributed to some diversification of crops.

Postwar economic changes deeply affected irrigation projects as well. The total acreage of irrigated land declined by 30,000 acres during the 1920s. Although the total acreage decreased, the number of irrigated farms actually increased by an additional 2,678 farms between 1919 and 1929. Since the cost of preparing land for irrigation was the highest in the United States, intensive rather than extensive irrigation came to define Washington agriculture.

In a decade marked by declining markets and irrigated lands, the Columbia Basin irrigation project ironically captured the imagination of state and local organizations in the 1920s. Farmers, however, expressed little interest in the project. The main boosters were contractors, bankers and politicians, who hoped to generate work for unemployed residents as well as for themselves. With unexpected public funding, both the Grand Coulee and Bonneville dam projects began construction in 1933-34 as part of the New Deal. The Columbia River and Columbia River Basin would change radically as a result, with the dams enabling the irrigation of more than a million acres of arid land.

What agriculture was to eastern Washington, timber was to western Washington. Several California-owned sawmills were built on the Puget Sound in 1853. Most Washington lumber was sold in California by the end of the 1850s. The San Francisco market, however, proved unpredictable, leading to increased trade with other Pacific ports in Hawaii, Peru, and Australia.

As railroads effectively connected the Puget Sound to the East Coast and Midwest as well as interior Washington, the national timber industry underwent several changes. Over-cutting of forests in the Great Lakes caused Midwestern lumbermen to migrate westward. The San Francisco-based lumbermen—whose mills were near the ports of Gamble, Ludlow, Madison, and Blakely—consequently faced competition from the newer lumbermen from the Midwest, who centered their operations near Tacoma. The Tacoma mills had the distinct advantage of being able to ship lumber east via railroad whereas the older mills still had to rely on waterborne trade alone.

On top of westward migration and increasing competition, the lumber industry also became mechanized. Until 1881, oxen dragged logs over greased skid roads and out of the forests, an increasingly inefficient method as logging moved inland. The invention of the steam-powered donkey engine allowed logs to be moved farther, faster, and cheaper by cables. Washington had three times as many steam donkeys as Oregon and California combined by 1900. Since neither oxen nor donkey engine could haul logs over long distance, many mills invested in railroad projects to deliver logs efficiently from the interior to mills.

Though Frederick Weyerhaeuser, a Midwesterner, had contemplated moving to the Pacific Northwest as early as the mid-1880s, he did not actively investigate opportunities in the region until 1898. Weyerhaeuser's desire for timber converged with the Northern Pacific Railway's need for capital in late 1899. Weyerhaeuser's syndicate, the Weyerhaeuser Timber Company, eventually agreed to purchase a million acres of land at six dollars per acre in 1900. By the early twentieth century, Weyerhaeuser and his companies owned 26 percent of all Washington timberlands.

Weyerhaeuser, primarily interested in land and timber acquisition at the time, was not a major lumbering enterprise until after World War I. In the meantime, the sale of the California-owned Port Blakely Mill Company and the North Western Lumber Company to Midwest investors in 1903 completed the transformation of Washington lumbering from a San Francisco-based industry to an expansion of the Great Lakes lumber industry. Weyerhaeuser subsequently built the world's largest sawmill in Everett, Washington in 1914.

More lumber, however, was manufactured than could be sold profitably, a circumstance that encouraged Washington lumbermen to form trade associations. Puget Sound and Grays Harbor mill owners established the Pacific Coast Lumber Manufacturers Association in 1901, which later evolved into the regional West Coast Lumberman's Association. The Association succeeded in establishing improved grading practices, but its attempts to control railroad rates and fix prices failed. Beginning in 1905, Washington ranked first among the states in lumber production for nearly three decades. In 1910, almost two thirds of Washington's wage earners depended on the lumber industry for their livelihood.

The expansion of the industry came at great environmental expense. Nineteenth-century logging was exceptionally wasteful, especially since the donkey engine could only be used on cleared terrain. Only prime timber was harvested; the remainder was left on the forest floor to decay and inadvertently nourish forest fires. By 1905, more timber west of the Cascades was destroyed by fire than removed by logging. The potential loss of timber by fires, in turn, promoted rapid cutting regardless of the market conditions to preserve lumber profits. In addition to the grave fire hazards, annual property taxes also encouraged lumbermen to log rather than pay an additional year of taxes.

Conservation, therefore, was generally seen as antagonistic to the lumber industry. Some progress was made with the creation of forest reserves. The establishment of reserves combined with extensive purchases by Weyerhaeuser and others made timberlands more scarce and expensive. A major natural disaster, the Yacolt Burn of 1902, introduced some forest management measures. The massive burn between Mount St. Helens and the Columbia River, covering 25,000 acres, led lumbermen to lobby governments to cooperate with private landholders to reduce forest fires. In 1908, lumbermen organized the Washington Forest Fire Association. In 1909, the Western Forestry and Conservation Association was established to publicize the cause and to campaign for property tax relief to encourage more limited cutting. Lumbermen also supported the creation of the University of Washington forestry school in 1907. They embraced conservation reforms in the form of fire protection and tax relief, measures that aided their industry and profits.

Washington's pulp and paper industry took root in the Olympic peninsula soon after World War I, though the earliest mills had opened before then. The once undesirable hemlock—unsuitable for lumber, but quite suitable for pulp and paper—formed the basis of the new industry. Loggers on the Olympic Peninsula, seeing an opportunity to exploit their tracts of hemlock, quickly invested in the industry. The Washington Pulp and Paper Company began operating in 1919 and by 1928 two-dozen pulp and paper plants were operating in Washington. The waste from the plants unfortunately contributed to the deterioration of both water quality and shellfish health in the Puget Sound.

A struggle soon ensued between Port Angeles and Grays Harbor pulp and paper manufacturers—backed by state government officials and foresters from the University of Washington—and the Environment Conservation Committee, created by northeastern environmentalists, over the proposed Olympic National Park. The former charged that the park would sacrifice the

peninsula residents' jobs and investments. After several years of debate, the park was established in 1938, an initial effort in limiting the expansion of the forest industries for the sake of the preservation of forests.

Agriculture, irrigation, logging, and industrialization in general profoundly affected both salmon habitat and local fisheries. Before 1850, Indians were the sole suppliers of salmon. Early trade placed Indians as producers and whites as consumers but, as diseases killed Indians, this relationship changed. Fearing that Americans might seize the salmon trade, the Hudson Bay Company took an early interest in fishing to maintain its control over natural resources.

Industrial fishery moved into the region, as immigration made the fish trade more lucrative. Many fishermen, like lumbermen, moved to the Northwest in search of resources that they had depleted in California and on the Atlantic coast. In 1866, Hapgood, Hume and Company established the first fish cannery on the Columbia River and packed 272,000 pounds of salmon. By 1881 there were some thirty canneries in the Northwest. Canned salmon—popular in eastern U.S., Great Britain, and other areas as an inexpensive but nourishing food—generated healthy profits. The expansion from a local to a global market further accelerated production. To gain an edge over their competition, fishermen added more layers to their gillnets and also introduced traps, poundnets, and fishwheels in the 1870s.

Increased competition and mechanization led to consolidation. Excluded from other jobs in the fisheries by organizations such as the Columbia River Fishermen's Protective Union, Chinese laborers primarily worked in the canneries until 1903. The development of the "iron chink" and other machines made Chinese and other laborers less indispensable to cannery work. Though mechanization increased production, it relied on a large supply of both capital and fish. Between 1900 and 1919, the salmon industry produced more than a million cases of sockeye and pink salmon per year. Consolidation, overproduction, and marketing problems led to the establishment of several packing associations, such as the Columbia River Packers Association.

Besides salmon, the Northwest had two other fishing specialties: halibut and shellfish. The decline of Atlantic fish banks, increased transportation, and improved refrigeration all led to a rapid increase in Northwest halibut fishery. By 1915 the annual catch of halibut reached 66 million pounds. Though smaller in scale, shellfish was also an important commodity. Willapa Bay had exported its famous oysters to San Francisco since the early 1850s. By 1915 shell fishery was a million-dollar industry, though harvests had also begun declining.

The depletion of fisheries brought about measures to preserve the region's resources. The International Fisheries Commission began studying halibut fisheries in 1924 and imposed closed seasons, catch limits, and nursery maintenance beginning in 1932. To protect salmon in the Columbia River and Puget Sound, Washington state began outlawing certain types of gear (fish wheels, for example, in 1935), but restrictions on one kind of gear simply led to the use of others. The construction of Bonneville and Grand Coulee dams further complicated preservation efforts. After pressure from fishing interests, elaborate fish ladders and screens were installed at

Bonneville. Salmon migrating upstream, however, still suffered a 15 percent mortality rate. Too tall for ladders, the Grand Coulee eliminated thousands of miles of salmon habitat. Artificial propagation and hatcheries were established to restock depleted areas. Experiments in breeding and hybridization were conducted at the University of Washington to bolster these efforts.

Declining natural resources and the depression of the 1930s led to both conservation measures and economic planning. The Washington State Planning Council completed studies of important areas of the regional economy and published reports on forestry, fisheries, minerals, and land reclamation. Other organizations undertook similar studies of the region's natural resources, particularly with further development and exploitation in mind. Always dependent on harvesting or extracting natural resources for a larger market, Washington's economy would remain so with the explosion of economic activity related to government contracts and wartime production in the 1940s.

Today fisheries, forestry, and agriculture continue to play an important role in Washington state's economy. Aquaculture, primarily Atlantic salmon and oysters, was a $37 million business in Washington state in 2001. From research to hatcheries and dam modifications, considerable money is spent on saving wild salmon, the icon of the Pacific Northwest. Washington's forest industry is among the largest in the nation, second only to Oregon. Today forest products companies manage more than half of Washington's privately owned forests (36 percent are privately owned). Employing 91,700 people in 1998, agriculture remains a major industry in the state. Washington ranks second (behind California) in the diversity of its crops and fifth in wheat production; it is the leading producer of several crops, including apples, pears, red raspberries, hops, lentils, Concord grapes, and sweet cherries.

The development of Washington state agriculture, forestry, and fisheries between 1850 and 1945 is documented in many publications held by the University of Washington Libraries, Washington State University Libraries, Washington State Library and other libraries in the region. Below is a sample of titles ranked most important for preservation by the Washington State scholarly review panel.

Serial Titles: For agriculture, *Northwest Science*; several WSU publications including *Research Studies* and the Agricultural Extension *Bulletin; Ranch* (later known as *Ranch and Range* and the *Washington Farmer*); *Washington State Farm Bureau News; Northwest Fruit Grower* (also known as *Wenatchee Fruit*); and *Appleland News*. For forestry, *The Timberman; West Coast Lumberman;* the University of Washington Forest Club *Annual;* and several Washington State government forestry publications including *Report of the State Fire Warden.* For fisheries, *Pacific Fisherman;* several UW publications including *Publications in Fisheries* and *Puget Sound Marine Station Publications;* several publications for sportsmen including *Washington Sportsman*; and state publications including the Washington State Fish Commission *Annual Report of the State Fish Commissioner.*

Book Titles: Several early accounts describing the area including Denny's *Pioneer Days on Puget Sound* and Meeker's *Pioneer Reminiscences of Puget Sound, Hop Culture in the United States,* and *Prospectus of the Puyallup Hop Company.* Titles both about and promoting migration including Pacific Northwest Regional Planning Commission publications such as

Recent Migration into the Pacific Northwest, railroad publications such as Northern Pacific Railroad Company's *The Fertile and Beautiful Palouse Country,* and Washington State government publications on logged-off and irrigated lands. Also, Bryan's *Historical Sketch of the State College of Washington, 1890-1925* and Crawford's *The Washington State Grange, 1889-1924.*

Other popular titles specifically addressed irrigation in the Columbia Basin including Pacific Northwest Regional Planning Commission's *Columbia Basin Study,* the Spokane Chamber of Commerce's *Columbia Basin Grand Coulee Project.* Others addressing the affect of irrigation and dams on fish, such as *Save the Columbia River Salmon* and *Report of the Preliminary Investigations into the Possible Methods of Preserving the Columbia River Salmon and Steelhead at the Grand Coulee Dam.* Other highly ranked fisheries books were Schultz's *Fishes of the American Northwest* and *Salmonoid Game Fishes in the National Forests of Northwestern United States,* and Hume's *Salmon of the Pacific Coast.*

For forestry books, several titles by Winkenwerder including *Forestry in the Pacific Northwest, Manual of Exercises in Forest Mensuration* and *Report on the Reforestation of the Cedar River Watershed.* Other popular titles were Williams' *Logger-talk: Some Notes on the Jargon of the Pacific Northwest Woods,* Holbrook's *Holy Old Mackinaw* and several titles by Archie Binns including *The Roaring Land* and *The Timber Beast.*