

BOTTLED WATER IN OREGON

INSTITUTE FOR WATER AND WATERSHEDS —SEPTEMBER, 2012

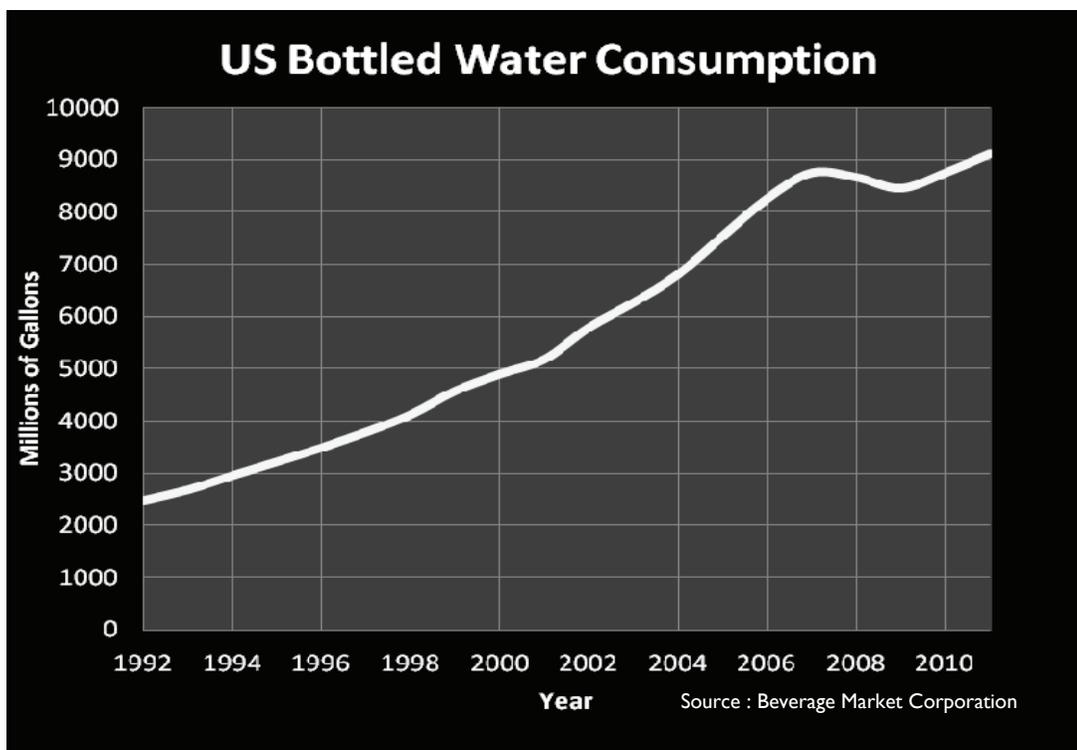
Bottled water is a big and controversial business. Over the past two decades it has grown and become a powerful economic force. Bottlers say it is a healthy alternative to coffee, soft and energy drinks. Also they state that bottled water provides customers with clean and great tasting water. Opponents on the other hand say there is no significant difference between bottled and tap water. They note that almost half bottled water is in fact tap water. In addition, they note the immense amount of plastic in the bottles, and the environmental impact derived from fabrication to disposal.

Brief History of Bottled Water

Bottled water has been around for a long time, however over the past twenty years consumption has grown at a high rate. Water is essential for life, and humans have made use of ways to store and transport it throughout history. But the marketing of bottled water starts with “specialty” waters like Bath Spa in England and Vichy in France (early 1700s). These “spa waters” were believed to have medicinal qualities, and derived health benefits. In the 19th century bottled water from springs and retreat baths were marketed and consumed by the elite and were not accessible for the average person. In the middle of the 20th century bottled water became more available, but not common, and home delivery services and the “water cooler” were developed. In 1976 the US had a per capita consumption of 1.6 gallons of bottled water.



Growth Spurt



Bottled water consumption has been on a steady increase for over 20 years.

Between 1992 and 2011 bottled water sales have increased by 266% in the United States.

After two years of negative growth associated with the recession (2008 and 2009), the bottled water industry has picked up where it left off. In general the liquid beverage industry had grown in 2011, but bottled water grew almost 5 times more.

Today

In 2011, the United States consumed 9,107 million gallons of bottled water and generated revenue in excess of 11 billion dollars. The average person in the US consumed 29.2 gallons of bottled water last year. Bottle water use in the state of Oregon is estimated to be between 120 and 182.14 million gallons.

The Water That Goes into the Bottle

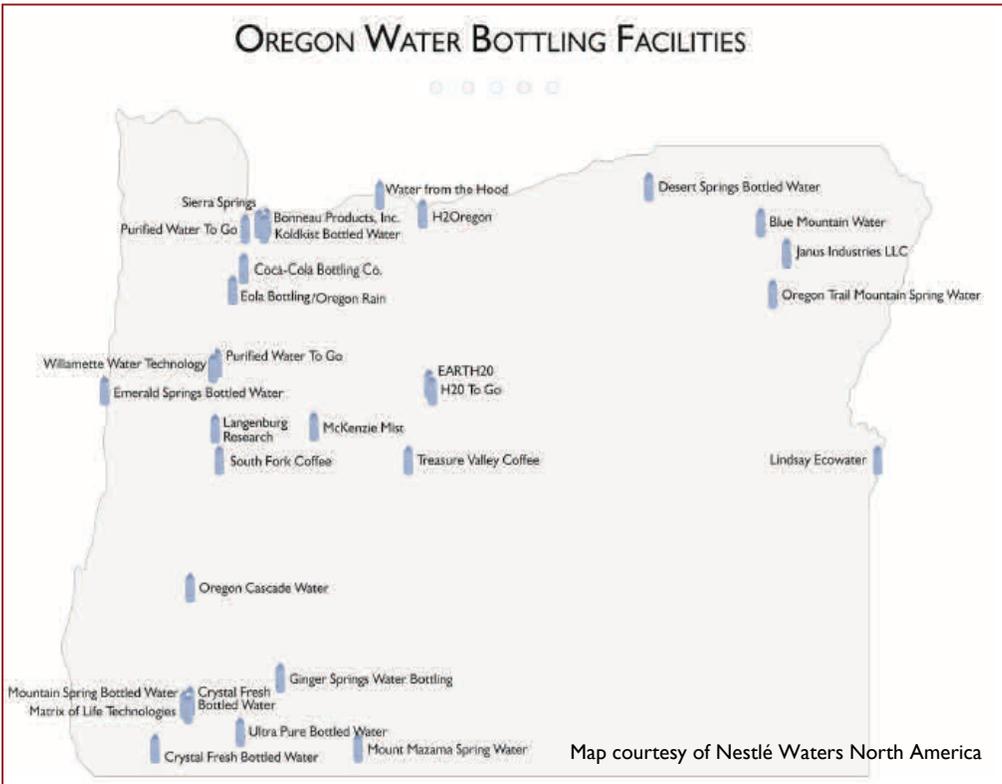
Water quality is regulated by two main federal agencies. The Food and Drug Administration (FDA) regulates bottled water, while the Environmental Protection Agency (EPA) is in charge of overseeing public water supply. Both agencies have their own standards for water, and while they are similar they are not equal. They also have distinct monitoring and enforcement practices.

What types of water are there, and where are the sources? Most of the companies that bottle water in Oregon use one or more purification methods. The most common processes are filtration, ultra violet, ozonification, and reverse osmosis. Many consumers believe that that bottled water is a “healthier option”, but tests have shown that public water can have lower levels of restricted substances. In general, no guarantee can be made that bottled or tap water is “safer”.

NAME	DEFINITION
Artesian Water or Artesian Well Water	Water from a well tapping a confined aquifer in which the water level stands at some height above the top of the aquifer.
Mineral Water	Water containing no less than 250 ppm total dissolved solids that originates from a geologically and physically protected underground water source. Mineral water is characterized by constant levels and relative proportions of minerals and trace elements. No minerals may be added to mineral water
Purified Water	Water that is produced by distillation, deionization, reverse osmosis or other suitable processes and that meets the definition of "purified water" in the U.S. Pharmacopeia, 23d Revision, Jan. 1, 1995. As appropriate, also may be called "demineralized water," "deionized water," "distilled water," and "reverse osmosis water"
Sparkling Bottled Water	Water that, after treatment and possible replacement of carbon dioxide, contains the same amount of carbon dioxide that it had at emergence from the source
Spring Water	Water derived from an underground formation from which water flows naturally to the surface of the earth at an identified location. Spring water may be collected at the spring or through a bore hole tapping the underground formation feeding the spring, but there are additional requirements for use of a bore hole
Well Water	Water from a hole bored, drilled, or otherwise constructed which taps the water of an aquifer

Water Bottlers in Oregon

In Oregon there are almost 29 different companies that bottle water. Most of them are small companies that cater to the home and office delivery (HOD) markets. HOD comprises the 3, 4 and 5 gallon (mostly reusable) water jugs, whether they are delivered or bought at a grocery store. Many of the companies also have disposable bottled water for sale, but this is a minuscule part of the business. Nonetheless, HOD represents only 20% of the market for bottled water. The remaining 80% is covered by the retail portion of the industry. This includes disposable containers from 2.5 gallons or less. Retail bottled water does not only represent the largest sector of the business, but also the fastest growing one.

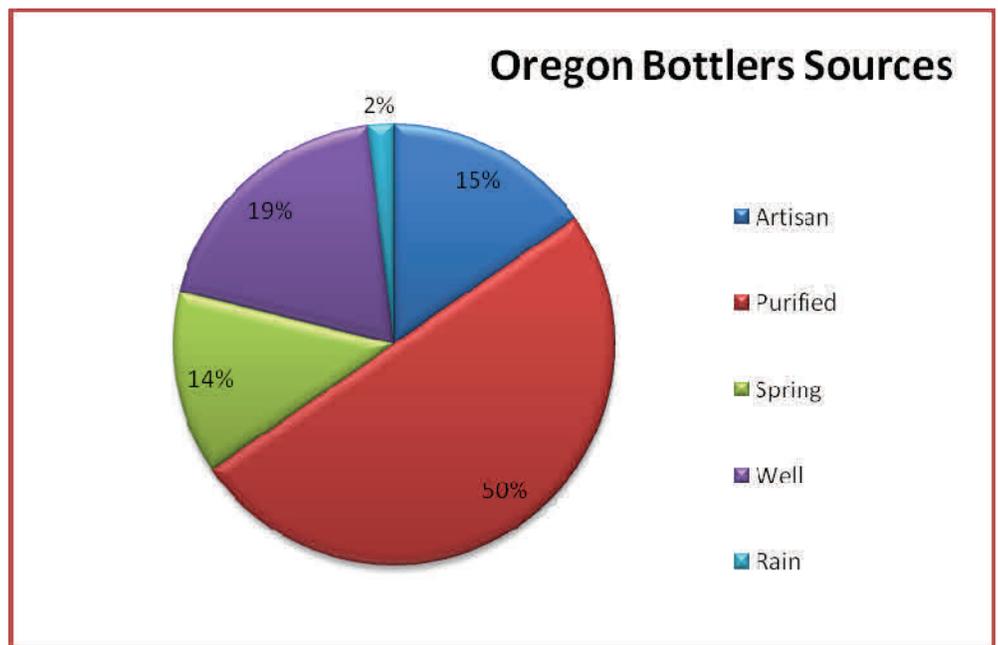


Five companies; Nestle, Pepsi, Coca-Cola, Crystal Geyser, and Dannon have a strong hold on the domestic market. Combined they hold 96% of the market. The rest of the companies, both domestic and international share a mere 4%.

The sources of these companies are represented in the pie chart below. Purified water represents half of the bottling plants located in the state. Purified water often comes from municipal sources, comprising close to 50% of the United States market. In the state of Oregon 30% of the bottlers get their supply from a municipal source.

Financial Impact

The Oregon water bottle industry employs as many as 1,624 people, and generates an additional 3,970 jobs in ancillary and supplier industries. The International Bottled Water Association estimates the total impact of the bottled water industry in the state to be as much as \$1.1 billion in 2011 (about 0.6 % of the gross state product). Nationally, the impact of the industry is larger with almost a 1% contribution to the GDP.



Water and Oil

Along with demand, questions about the environmental costs of bottled water have been raised. The resources needed to produce and transport bottled water, as well as the quantity of plastic waste that has to be recycled or ends up in landfills.

Last year about 18.7 million barrels of oil were used to produce water bottles for the US market. In the process of manufacturing those bottles 2.75 million tons of CO₂ were released into the atmosphere. When the energy requirements of bottling and transportation are included the total number is somewhere between 32 and 58 million barrels of oil, close to 1% of the total oil consumption in the country.

To supply Oregon consumers between 0.5 and 1.2 million barrels of oil were used. The Department of Environmental Quality recently conducted a life cycle assessment of drinking water systems. The analysis looked at tap, bottled and home and office delivery (HOD) services. All the scenarios represented in the study show a significant difference between public water and bottle waters. HOD services have the least impact, followed by in-state bottled water. Long hauled bottle water is by far the worst possible option.

Amongst all types of plastic bottles, water bottles are the most recycled. Nonetheless, only 23% of water bottles get recycled. The United States consumes 50 billion 16 oz. plastic bottles a year, that means 38.5 billion bottles annually are not recycled.

Many bottlers try to reduce the amount of plastic that goes into each bottle. In Oregon companies are looking for alternative solutions like using biodegradable plastics (Oregon Rain), biodegradable boxes (Ginger Springs Water), or maximizing the recycled plastic that goes into their bottles (EARTH₂O).

The Fight Against Bottled Water

With the increased awareness of the environmental impacts associated with bottled water, national campaigns (like “Think outside the bottle” and “Take back the tap”) have been launched. The proponents of these campaigns want government to take charge by cutting water contracts, not buying bottled water, and enforcing stricter label disclosure requirements. In Oregon, Southern Oregon University, University of Portland and Pacific University have banned sales of bottled water on campuses. Other colleges and schools have campaigns that promote the use of reusable bottles and encourage drinking tap water, but have not restricted sales.

Consumers

Bottled water costs more than public water. Bring your own bottle stations charge 6 to 10 times more than municipal sources, but the difference against retail bottle water can be as high as 2000 the cost of tap water. Yet consumers keep buying, and every year they buy more. The perception of risk, flavor and the huge profits from bottled water are likely to continue the increase of the business. The quality of tap water in the United States, and the push against bottled water, can hope to slow the growth, but bottled water is here to stay.

Consumers have to blindly trust the quality of their bottled water because many bottlers do not include information on origin and purification processes on labels. Bottlers do not present information on the water quality tests that they conduct or their findings. Calls from consumer groups to make bottlers provide this information on bottled water labels has met with mixed success. A survey found almost 40% of bottlers provided more information in 2010 than in 2009, a similar fraction had no change, and more than 15% of the brands surveyed showed less information than the previous year.

Cascade Locks

Nestle Waters is evaluating a plan to build a bottling plant at Cascade Locks. The water from Oxbow Springs is currently used by the Oregon Department of Fish and Wildlife (ODFW) for its fish hatchery. The ODFW has applied to OWRD to transfer the water rights to the City of Cascade Locks. ODFW plans to use the water from a city well in its hatchery. In return, the city would get the rights to 0.5 cubic feet per second (more than 100 million gallons annually) of water from Oxbow Springs and they would sell it to Nestle at a price of 2 cents per 1000 gallons (the current commercial rate).



Photo courtesy of OSU Archives.

Build the Plant

Nestle is looking for a high quality spring water source to bottle. They believe that there is more than enough water to meet the community needs. The proposed plant would provide an economic boost to the City of Cascade Locks. The city is behind the plant as it would bring up to 50 well paying jobs, as well as indirect benefits, like doubling the property tax revenue. The bottling plant would require an investment of up to 50 million dollars, and would meet Leadership in Energy and Environmental Design (LEED) Standards. Nestle Waters conducted a long term study that shows the well water is suitable for raising fish.

Republican representative Mark Johnson supports the plant, he states that the opposition to the plant comes from urban legislators, and is an unfortunate example of the divide between rural and urban Oregon. Senator Mark Thompson is in favor as well. The proposed exchange of water rights received preliminary approval by Oregon's Water Resources Department.

Do not Allow the Transfer

The opposition against the Plant is lead by Food and Water Watch and the Sierra Club. They are joined by the Columbia River Keeper, American Federation of State, County and Municipal Employees (AFSCME), Oregon Physicians for Social Responsibility, Mount Hood forest group Bark, and Senator Jackie Dingfelder (D, Portland), among others. They seek to prevent a public resource from being used for the benefit of a multinational corporation. They believe the intended used of the water should be taken into account, and they say it is not in the public's best interest to allow Nestle to control the water supply. The proposal for the plant does not represent a win-win situation for the state, as the city will not give compensation for the transferred water. There are alternatives for economic development outlined in the City of Cascade Locks Comprehensive Plan (2009). Senator Dingfelder, and other democrats want the governor to prevent the transfer of rights. However, Governor John Kitzhaber stated he will not intervene in the decision.

“It is interesting that people spend a lot of time looking at organic food, organic vegetables, reading the labels of what they’re going to eat. But when they choose to ingest a liquid beverage, whether it be bottled water or a carbonated soft drink or an energy drink they are not exploring the source. Yet that is the one thing that they are going to drink that is going to touch every single organ of their body.”

Steve Emery, CEO of EARTH20

More Information

If you want to learn more about bottled water, you can find in-depth information from the following sources:

EPA

<http://water.epa.gov/drink/>

FDA

<http://www.fda.gov/food/foodsafety/product-specificinformation/bottledwatercarbonatedsoftdrinks/ucm077065.htm>

Oregon Department of Environmental Quality, life cycle analysis

www.deq.state.or.us/lq/sw/wasteprevention/drinkingwater.htm

International Bottled Water Association

<http://www.bottledwater.org/>

Nestle Waters of North America

<http://www.nestlewaterspnw.com/>

Food and Water Watch

<http://www.foodandwaterwatch.org/>

The Story of Bottled Water

<http://www.storyofstuff.org/movies-all/story-of-bottled-water/>

Tapped, the movie

<http://www.tappedthemovie.com/>

The Sierra Club

<http://www.sierraclub.org/watersentinals/>

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