



TAKE BACK THE TAP

Bottled Water Wastes Resources and Money

About Food & Water Watch

Food & Water Watch works to ensure the food, water and fish we consume is safe, accessible and sustainable. So we can all enjoy and trust in what we eat and drink, we help people take charge of where their food comes from, keep clean, affordable, public tap water flowing freely to our homes, protect the environmental quality of oceans, force government to do its job protecting citizens, and educate about the importance of keeping shared resources under public control.

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Executive Summary

Americans have bought into the myth that bottled water is purer and healthier than tap water. This misconception is largely the result of crafty marketing tactics from the bottled water industry,¹ but the truth is that the federal government requires more rigorous safety monitoring of municipal tap water than it does of bottled water.²

For this first time in years, total U.S. bottled water sales fell during the economic recession.³ During this time, more-expensive brand names struggled while cheaper private label water — store brands — experienced an increase in sales.⁴ This competition led Nestlé, among other companies, to reduce the price of its bottled water,⁵ to use advertising methods that tout purity⁶ and to target both people in emerging markets and minority groups in the United States that have limited access to safe drinking water.⁷

Between 2007 and 2012, Nestlé's bottled water sales fell in the United States, Canada and Europe but boomed by 73 percent in other regions.⁸ A survey published in a journal of the American Medical Association found that African-American and Latino parents dish out more money on bottled water than non-Latino white parents. The survey found that this is largely because Latino and African-American parents were more likely to believe that bottled water was safer than tap water.⁹

What some people may be unaware of is that almost half of the bottled water sold today comes from municipal tap water supplies.¹⁰ When bottlers are not selling municipal water, they are pumping and selling common water resources that belong to the public. These pumping operations can harm the environment and natural resources that communities rely on.¹¹

Just kicking the bottle in favor of the tap is not enough. Our public drinking water systems need renewed federal commitment, but instead we are decreasing federal funding for our essential water and sewer systems. The federal government's contribution to water infrastructure improvements dropped from more than 60 percent in 1977 to less than 7 percent in 2007.¹² After receiving a boost in 2010, federal support for water and sewer systems continued to decline in 2011 and 2012.¹³ A Clean Water Trust Fund would provide a dedicated source of federal funding so that communities across the United States can keep their water clean, safe and affordable, and the U.S. Congress should pass legislation declaring water a universal human right.

Key Findings

- **Multinational water bottlers have lowered prices in order to compete with less-expensive products,¹⁴ with the decline in sales and price competition most evident during the height of the economic recession.¹⁵** Over the last decade, the average wholesale price of bottled water has fallen by more than 10 percent, dropping 3 percent from 2003 to 2007, and another 8 percent from 2007 to 2010.¹⁶ Retail prices fell about 6 percent from 2006 to 2009.¹⁷
- **From 2007 to 2012, Nestlé's total bottled water sales fell by 31 percent.** Sales fell 28 percent in the United States and Canada, dropped 51 percent in Europe and boomed in emerging markets by 73 percent.¹⁸
- **Nestlé has invested heavily in its Pure Life brand¹⁹ and is greatly targeting its advertising to emerging markets²⁰ and minority groups.²¹** In 2009, Nestlé Pure Life was the most advertised bottled water brand in the country, with nearly \$10 million spent, mostly on television ads.²² Between 2004 and 2009, the company increased advertising expenditures on its Pure Life brand by 3,000 percent.²³
- **In 2007, U.S. bottled water consumption had an energy input equivalent of between 32 and 54 million barrels of oil.²⁴** That amount of energy could fuel anywhere from 1.2 to 2.1 million cars over the course of a year.²⁵
- **About 77 percent of PET plastic water bottles are not recycled and end up in landfills, as litter or incinerated.²⁶** And municipalities are paying at least \$98 million a year to dispose of bottled water waste in the form of tipping fees.²⁷
- **Bottled water is significantly more expensive than tap water and regular-grade gasoline.** Bottled water can cost nearly 2,400 times the price of tap water and almost three times the price of gasoline.²⁸
- **The federal government's contribution to water infrastructure improvements has dropped from more than 60 percent in 1977 to less than 7 percent in 2007.²⁹** Reliance on bottled water may make people less inclined to support public investment in municipal water systems.³⁰

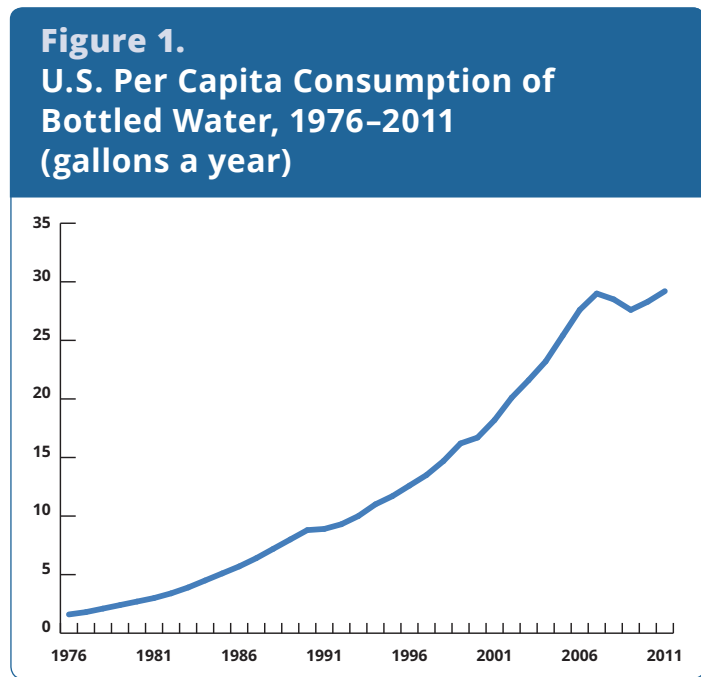
Introduction

Over the past three decades, per capita bottled water consumption in the United States has increased nearly 20-fold.³¹ The industry has generated demand for bottled water through marketing,³² persuading Americans that bottled water is purer and healthier than tap water.

Bottled water is ubiquitous, and many people are now accustomed to buying water in plastic bottles rather than drinking it from a tap or fountain. As of 2011, the average American drank 29 gallons of bottled water each year.³³

But what many Americans may not know is that the federal government requires more-rigorous safety monitoring of municipal tap water than it does of bottled water.³⁴ Consumers are wasting money on a product that costs thousands of times more than drinking tap water from their faucet (see box on page 8), even though almost half of the bottled water comes from municipal water systems.³⁵

The production of bottled water causes significant equity and environmental problems. Bottled water companies are profiting by using false advertising, privatizing groundwater supplies or selling tap water in overpriced and environmentally damaging plastic bottles.



SOURCE: Beverage Marketing Corporation. “Bottled Water in the U.S.” 2010 Edition. July 2010 at 15; Beverage Marketing Corporation. [Press release]. “Reinvigorated Bottled Water Bounces Back from Recessionary Years, New Report from Beverage Marketing Corporation Shows.” May 2012.

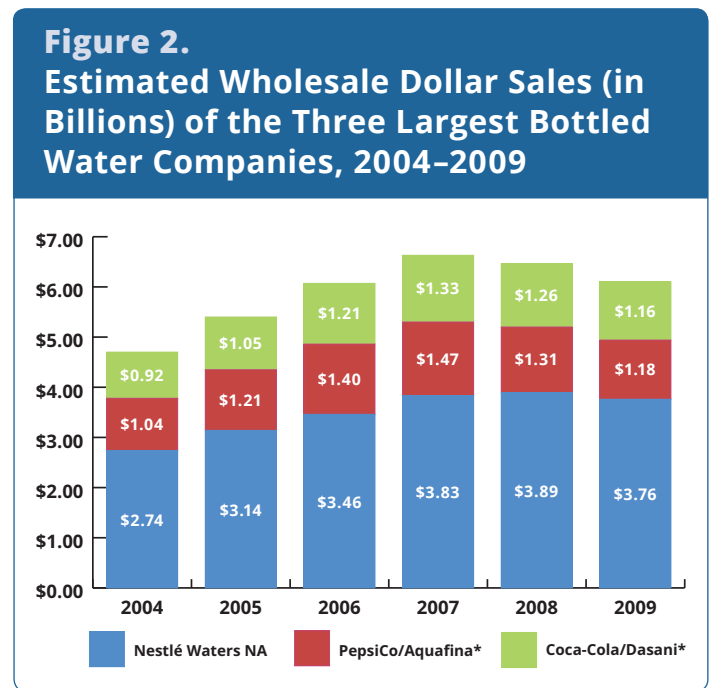
Bottled Water Trends

Although not everyone in the United States drinks bottled water, the amount of bottled water consumed per person grew exponentially from the late 1970s until the recent recession. (See Figure 1.)

In 1976, the average American consumed 1.6 gallons of bottled water annually. By 1986, consumers were drinking more than three times that amount. Ten years later, annual per capita consumption had spiked to 12.6 gallons. Over the next decade, the bottled water industry saw tremendous growth, and by 2007, each person in the country consumed an average of 29 gallons of bottled water a year.³⁶

This industry experienced steady growth in sales, especially for the three major bottled water companies: Nestlé Waters, PepsiCo (Aquafina) and Coca-Cola (Dasani). (See Figure 2.)

But when the recession hit, in 2008 and 2009, total U.S. bottled water sales declined for the first time in decades.³⁷ (See Figure 3.) During this time, although the big three saw multi-million dollar declines (see Figure 2),³⁸ cheaper private label bottled water — store brands — experienced an increase in sales.³⁹ In 2010, the chairman of the Beverage Marketing Corporation predicted that costlier bottled water brands would have a slow recovery as consumers continued to seek less-expensive products.⁴⁰



SOURCE: Beverage Marketing Corporation. “Bottled Water in the U.S.” 2010 Edition. July 2010 at 220.

Indeed, the decline in sales during the height of the recession had the greatest implications for the large multinational water bottlers. In order to stay in the game, Nestlé and the two other big bottled water companies had to reduce the price of their bottled water.⁴¹ Nestlé Waters North America's CEO Kim Jeffery pointed out in a 2010 presentation that the company's biggest competitor is now the private label, and that price competition poses a large challenge.⁴²

Over the last decade, the average wholesale price of bottled water has fallen by more than 10 percent, dropping 3 percent from 2003 to 2007, and another 8 percent from 2007 to 2010 alone.⁴³ (See Figure 4.) This is reflected in the price that consumers pay in the store, which fell about 6 percent from 2006 to 2009.⁴⁴

Bottled water sales have started to recover, increasing by 0.8 percent in 2010 and 3.7 percent in 2011,⁴⁵ while private label water sales are remaining strong.⁴⁶ From 2010 to 2011, private label water took away 2 percentage points of the market share from the three largest bottled water companies: Nestlé Waters North America, Coca Cola and PepsiCo.⁴⁷ Although the volume of bottled water sold in the United States increased by 5.8 percent in 2012,⁴⁸ bottled water companies continue to experience pressure to bring down prices as cheaper private labels continue to pose competition.⁴⁹

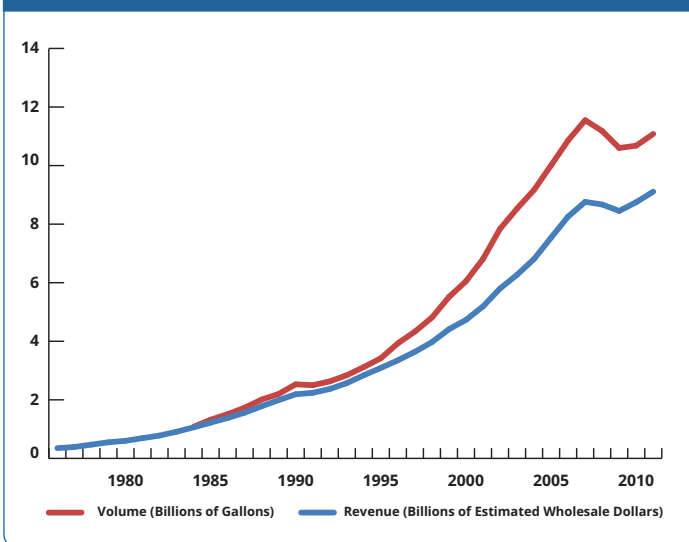
Nestlé Waters' Sales Continue to Struggle

Although Nestlé Waters remains publicly optimistic about its growth prospects,⁵⁰ the company appears to be obscuring the financial realities of its bottled water business. As reported by *Bloomberg* news, its waters sales continued to suffer in 2011 for the sixth year in a row.⁵¹

But, when Nestlé released its full-year results for 2011, its press release boasted that the company experienced an organic growth of 5.2 percent and grew in all three of its geographic zones.⁵² It is unclear how the company came up with those figures, as a careful analysis of Nestlé's Consolidated Financial Statements shows that Nestlé Waters experienced a 10 percent decline in sales from 7.2 billion Swiss francs in 2010 to 6.5 billion Swiss francs in 2011.⁵³

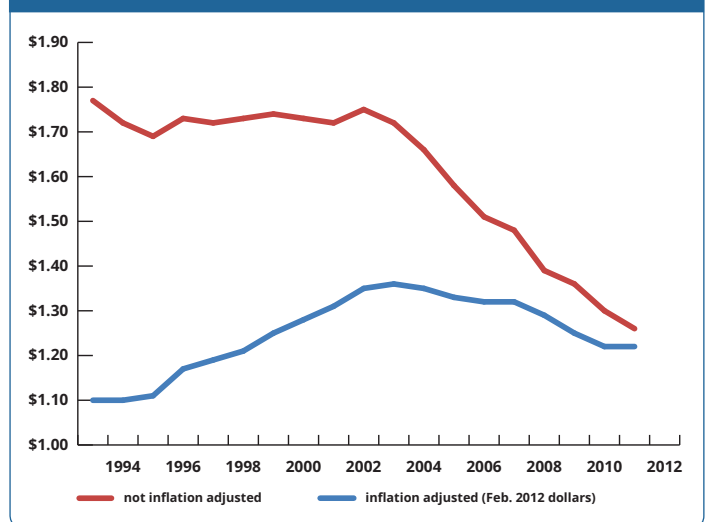
Based on the most recent sales numbers provided in Nestlé SA's annual reports, between 2007 and 2012, Nestlé Waters saw a total sales decline of 31 percent. North American bottled water sales dropped by 28 percent and European sales fell 51 percent. Targeting new markets, however, appears to be bringing the company some level of success. During the same six years, other regions of the world had a 73 percent increase in bottled water sales.⁵⁴ (See Table 1 and Figure 5 on page 5.)

Figure 3.
U.S. Bottled Water Sales, 1976–2011



SOURCE: Beverage Marketing Corporation. "Bottled Water in the U.S." 2010 Edition, July 2010 at 15 and 20; Beverage Marketing Corporation. [Press release]. "Reinvigorated Bottled Water Bounces Back from Recessionary Years, New Report from Beverage Marketing Corporation Shows." May 2012.

Figure 4.
Average Wholesale Price of a Gallon of Bottled Water in the United States, 1993–2011 (Est. Wholesale Dollar Sales/Volume of Water Sold)



SOURCE: Beverage Marketing Corporation. "Bottled Water in the U.S." 2010 Edition, July 2010 at 15 and 20; Beverage Marketing Corporation. [Press release]. "Reinvigorated Bottled Water Bounces Back from Recessionary Years, New Report from Beverage Marketing Corporation Shows." May 2012.

Table 1. Nestlé Waters Sales (in Billions of Swiss Francs)

Regions	2007 ^a	2008 ^a	2009 ^a	2010 ^b	2011 ^b	2012 ^c	Percent Increase or Decrease in Sales from 2007 to 2012*
Europe	4.55	4.26	3.77	2.65	2.44	2.21	-51%
U.S. and Canada	5.12	4.56	4.44	3.67	3.24	3.69	-28%
Other Regions	0.735	0.766	0.854	0.884	0.843	1.27	73%
Total Sales	10.4	9.59	9.06	7.21^d	6.52^d	7.17^d	-31%

^a Nestlé Annual Report 2009 at 29

^b Nestlé Annual Report 2011 at 43

^c Nestlé Annual Report 2012 at 47

^d This is a "restated" number using new Accounting Methods. See note (*) below.

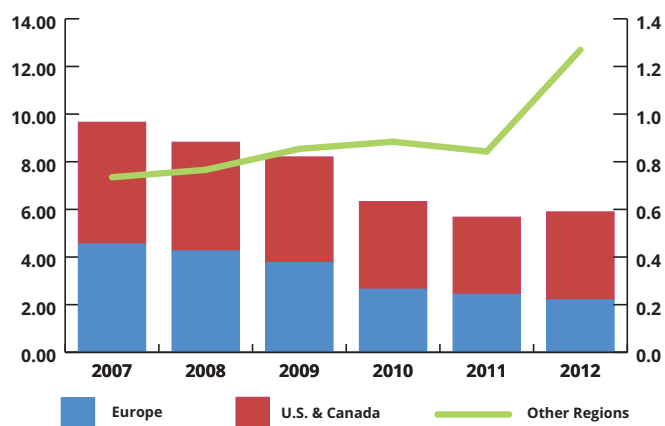
*In 2010 Nestlé changed the way it reports its sales by using a new accounting method. This came into effect January 2011. This was brought to our attention in May 2013 when Nestlé Waters North America's Media and Corporate Communications director emailed Food & Water Watch, stating: "Changes since 2007 make the sales figures in the 2007 Nestlé SA annual report incomparable to 2012."⁵⁵ (Record on file with Food & Water Watch.) Upon investigation, it seems that after making this accounting change, Nestlé restated its financial results only back to 2010. Due to lack of transparency regarding the methodology, we were not able to duplicate this new accounting method process for the 2007 – 2009 numbers. However, a Nestlé press release regarding the matter stated that the new method "will reduce Nestlé reported sales by about 15%."⁵⁶ Thus, we reduced the 2007 to 2009 numbers by 15 percent to estimate sales representative of the new accounting methodology and still found that Nestlé Waters sales have struggled. (See Table 1a below.) This finding is consistent with the April 2012 *Bloomberg* article entitled "Nestlé Water Suffers for Sixth Year as Consumers Try Tap" about how the company's sales continue to struggle.⁵⁷

Table 1a. Nestlé Waters Sales, Adjusted, in Billions of Swiss Francs

Regions	2007	2008	2009	2010	2011	2012	Percent Increase or Decrease in Sales from 2007 to 2012
Europe	3.87	3.62	3.20	2.65	2.44	2.21	-43%
U.S. and Canada	4.35	3.88	3.78	3.67	3.24	3.69	-15%
Other Regions	0.625	0.651	0.726	0.884	0.843	1.27	104%
Total Sales	8.84	8.15	7.70	7.21	6.52	7.17	-19%



Figure 5. Nestlé Waters Sales by Region, in Billions of Swiss Francs



SOURCE: Nestlé Annual Report 2009 at 29; Nestlé Annual Report 2011 at 43; Nestlé Annual Report 2012 at 47.

Tight economic times and a growing awareness among consumers about the negative economic, health and environmental effects of bottled water could be cutting into Nestlé Waters' earnings. Perhaps for these reasons, the company has shifted its advertising methods to focus on emerging markets.

Nestlé's Latest Marketing Strategies

Marketing is the cornerstone of the bottled water industry, which spends tens of millions of dollars a year on advertising.⁵⁸ In addition to reducing its bottled water prices,⁵⁹ Nestlé has responded to declining sales and competition from the private label by shifting its advertising tactics from promoting the source of the water to emphasizing purity. It also targets emerging markets, new immigrants and low-income consumers.

The Purity Hype

By playing the purity card, bottled water companies can sell tap water under nonspecific labels and avoid the question about where the water originates. It helps companies avoid controversy and potential lawsuits over how they advertise the source of their bottled water.

Nestlé is no stranger to this issue. For example, several class-action lawsuits were filed against the company because consumers found the company's description of its Poland Spring brand water as spring water "found deep in the woods of Maine" and "exceptionally well protected by nature" to be misleading. In 2003, Nestlé agreed to a multi-million dollar settlement to resolve a class-action suit from Illinois.⁶⁰

In recent years, Nestlé has focused its advertising on promoting its Pure Life brand. In 2009, for example, Nestlé Pure Life was the most advertised bottled water brand in the country with nearly \$10 million spent, mostly on television ads.⁶¹ Through its Pure Life brand, Nestlé began shifting production from spring water to tap water in 2005.⁶² Between 2004 and 2009, the share of the bottled water market that comes from municipal tap water supplies increased 14.3 percentage points — from about one-third to nearly half of the total volume sold.⁶³ The Beverage Marketing Corporation attributed much of this trend — the shift from spring water to tap water — to Nestlé Pure Life.⁶⁴

Between 2008 and 2009, when sales of almost all other major bottled water brands declined and industry-wide sales decreased by 5 percent, Nestlé Pure Life grew by 18 percent.⁶⁵ This may be due to the fact that Nestlé Waters

Chicago Faucet Shoppe Inc. vs. Nestlé Waters North America (2012)

Nestlé Waters is no stranger to legal battles. For years, communities around the United States have found themselves in court battling the company for control over their community water resources. The company has also been sued for using deceptive marketing practices.⁶⁷

Every month for more than four years, the Chicago Faucet Shoppe, a plumbing supply store, bought five-gallon jugs of Nestlé's Ice Mountain brand water for its office.⁶⁸ Like many consumers, the company was under the impression that it was purchasing spring water, but in July 2012 it learned that the water actually came from municipal supplies. After discovering the truth, the Chicago Faucet Shoppe filed a lawsuit against Nestlé Waters North America for "unfair and deceptive trade practices."⁶⁹

As explained in a *Law360* article, "Chicago Faucet is suing on behalf of all persons in Illinois, Michigan, Minnesota and Missouri who purchased the 5-gallon Ice Mountain bottles, claiming unjust enrichment and deceptive trade practices under the Illinois Fraud and Deceptive Business Practices Act and seeking actual and punitive damages, an injunction mandating disclosure and restitution."⁷⁰ The suit is still pending.

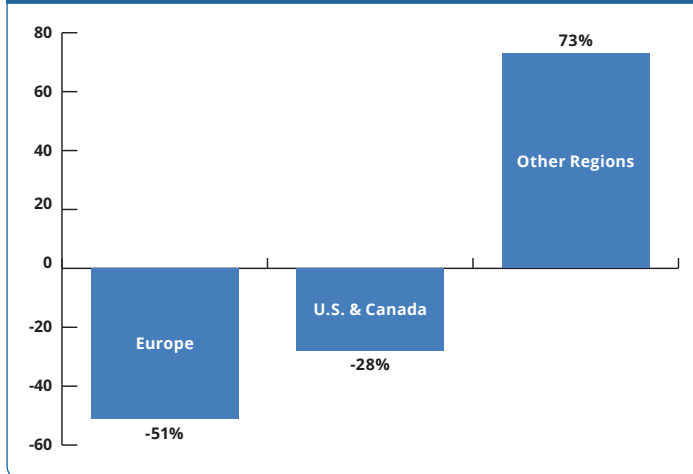
increased advertising expenditures on the brand by 3,000 percent, from \$0.3 million in 2004 to \$9.7 million in 2009.⁶⁶

Expanding Emerging Markets and Targeting Minority Groups

Nestlé Waters is also shifting the target of its marketing from its traditional customer base in the United States, Canada and Europe to Latino immigrants in the United States and "emerging markets" in the rest of the world. This seems to be a strategic move to hype the purity of its bottled water to populations that historically may have lacked access to safe tap water.

In 2008, emerging markets accounted for one-tenth of Nestlé Waters sales, and, according to *Reuters*, the company wanted to "further accelerate the growth of its Pure Life brand" in these regions.⁷¹ In 2010, *Bloomberg* reported that Nestlé Waters planned to "expand its proportion of sales from emerging markets to a third of revenue within a decade."⁷²

Figure 6.
Percent Increase or Decrease in
Nestlé Waters' Sales by Region,
2007–2012



SOURCE: Nestlé Annual Report 2009 at 29; Nestlé Annual Report 2011 at 43; Nestlé Annual Report 2012 at 47.

But the world's citizens who most need safe water are the ones least likely to be able to afford bottled water. So while selling bottled water abroad may be a good way to find new customers for Nestlé, this tactic is not going to solve the world water crisis. In fact, it could make matters worse. Wealthier individuals may be less inclined to support funding public water supplies if they rely on the bottled alternative.⁷³ This leaves everyone else high and dry.

In the United States, Nestlé Waters is targeting populations that are more likely to see bottled water as a good alternative to the tap because they come from countries where tap water is often not safe to drink. Nestlé Pure Life's target audience is recent immigrants from Latin America, particularly moms. A brand manager at Nestlé Pure Life explained to advertising magazine *Brandweek* in 2008, "Hispanics have known the brand for many years, so this is an opportunity for us to put the brand out there and create an emotional connection with them here [in this country]."⁷⁴ The company teamed up with Cristina Saralegui — a celebrity who has been referred to as the "Spanish Oprah"⁷⁵ — to be the spokesperson for Nestlé Pure Life and to star in a series of television commercials and print ads.⁷⁶

New York City's tap water is among the purest in the nation,⁷⁷ yet Nestlé opened up an entire store — Pure Life Mercado del Agua ("water store") — in the Bronx.⁷⁸ The Bronx is one of the lowest-income areas of New York City, and over half of the population is Latino and a third is African American.⁷⁹ The company is specifically

targeting people who are less likely to afford bottled water, even though they have a much cheaper water option available at the tap.

Researchers from the Medical College of Wisconsin and the University of Wisconsin discovered that education attainment and household bottled water expenditures are directly linked. Parents with higher educations are less inclined to purchase bottled water for their family.⁸⁰ The research also found that Latino and African-American parents were more likely to buy bottled water than non-Latino white parents, with health perceptions as the main reason why these parents are dishing out more money on bottled water.⁸¹ According to the researchers, "Such use patterns may produce adverse health effects and exacerbate economic disparities."⁸²

Less-Stringent Regulation for Bottled Water

Contrary to the industry's marketing, bottled water is not necessarily a purer, safer, healthier alternative to tap water.⁸⁵ Federal oversight of water quality is weaker than for tap water. In the United States, the Food and Drug Administration (FDA) regulates bottled water as a "food" under the Federal Food, Drug, and Cosmetic Act, whereas the Environmental Protection Agency (EPA) regulates tap water under the Safe Drinking Water Act.⁸⁶

The U.S. Government Accountability Office (GAO) found that the FDA devotes fewer resources to bottled water than it does to food because the agency considers bottled water to pose lower health risks compared to many food products.⁸⁷ Overall, the GAO found that, "... FDA generally accords bottled water a low priority."⁸⁸ In fact, between fiscal years 2000 and 2008, the FDA averaged fewer than three full-time employees devoted to inspecting bottled water plants.⁸⁹ Moreover, because the FDA regulates carbonated water, soda water, seltzer water, sparkling water and tonic water as soft drinks, these products are exempt from bottled water regulations altogether.⁹⁰

Federal law does not give the FDA the authority to oversee state regulation of bottled water, but it requires the EPA to oversee state regulation of tap water.⁹¹ Congress passed the Safe Drinking Water Act in 1974 with the purpose of protecting our public drinking water supplies.⁹²

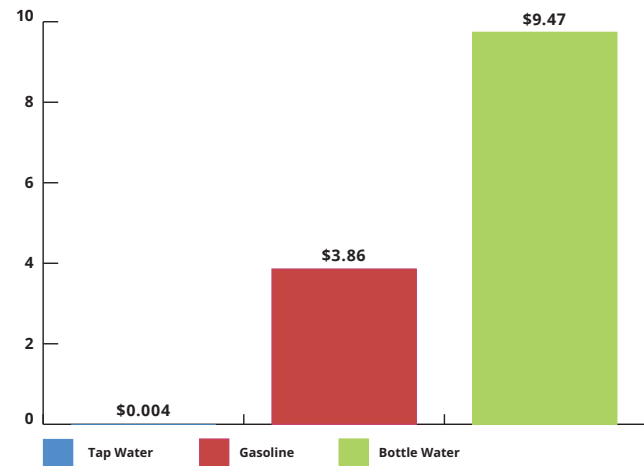
Among its many provisions, the Safe Drinking Water Act enables the EPA to establish and enforce health standards for contaminants in public drinking water and mandates public notification of any violations and public distribution of annual quality reports.⁹³ Specifically, the EPA's Maximum

The Price of Tap vs. Bottle: You Do the Math

The average price for a gallon of tap water is less than half a penny — about \$0.004 in 2012.⁸³ Moreover, when you are paying for tap water you are not purchasing the water itself but the service to get the water, treat it and send it to the faucet.

On the other hand, the price for a 16.9 ounce bottle of water could run anywhere from \$1.00 to \$1.50. Using an average of \$1.25, a gallon's worth of 16.9-ounce bottled water costs almost \$9.50 — nearly 2,400 times the price of tap water and almost three times the national average price for a gallon of regular grade gasoline.⁸⁴ (See Table 2 and Figure 7.)

Figure 7. Average Price of a Gallon of Tap Water, Regular-Grade Gasoline and Bottled Water



SOURCE: AAA's Daily Fuel Gauge Report. Available at <http://fuelgauge.report.opisnet.com/sbsavg.html>. Accessed September 20, 2012; American Water Works Association and Raftelis Financial Consultants, Inc. "2012 Water and Wastewater Rate Survey." February 2013 at 6 and 26.

Table 2. Price Comparison of Tap Water, Bottled Water and Gasoline

Use	Tap Water	Regular-Grade Gasoline	Bottled Water (16.9 oz. PET Bottles)
1 Gallon	\$0.004	\$3.86	\$9.47
5 Gallons	\$0.02	\$19.30	\$47.34
10 Gallons	\$0.04	\$38.60	\$94.67
20 Gallons	\$0.08	\$77.20	\$189.35

Contaminant Level (MCL) establishes legal limits on the level of contaminants allowed in drinking water. MCLs are based on human health risks, current available technology and the affordability of that technology.⁹⁴

No Federal Regulation for Bottled Water Sold Within State Lines

The FDA only regulates bottled water sold across state lines,⁹⁵ which leaves out the 60 to 70 percent of water bottled and sold within a single state.⁹⁶ For the 30 to 40 percent of bottled water that the FDA does regulate,⁹⁷ it requires bottlers to test their source water once a week for microbiological contaminants, unless the water comes from a municipal source, in which case it has to meet EPA testing requirements for tap water.⁹⁸ Bottlers must test their source water only once a year for chemical

contaminants and once every four years for radiological contaminants.⁹⁹

States have enacted their own laws and regulations for bottled water, but those regulations and laws are less consistent and comprehensive than those for tap water.¹⁰⁰ Inconsistencies in regulations can result in inconsistencies in bottled water safety.

Safety Concerns

Between 2002 and 2008, the FDA issued 23 recalls of bottled water — averaging more than three recalls a year — due to excessive contamination from dangerous substances, including bromate and arsenic,¹⁰¹ both of which may increase cancer risks.¹⁰²

Bottlers typically use ozone to disinfect their water.¹⁰³ This process, known as ozonation, can produce bromate as a byproduct if the water contains bromide.¹⁰⁴ Although bromate is a probable human carcinogen,¹⁰⁵ in 1982 the FDA classified ozonation of bottled water as being “Generally Recognized as Safe” and accepted it as a “Good Manufacturing Practice.”¹⁰⁶

Less Inspection and Less Accountability

The FDA inspects bottling plants irregularly, with some district offices only inspecting bottled water plants once every two or three years and other district offices inspecting them even less frequently.¹⁰⁷ Unlike public drinking water systems, which must keep water-testing records for five to 10 years, the FDA requires bottling facilities to keep test records for only two years.¹⁰⁸ Because of this and the infrequency of FDA inspections, the FDA may never learn of contamination problems at a bottled water plant.¹⁰⁹

When inspectors finally do go to bottled water manufacturing plants, they commonly find problems. More than a third of FDA and state inspections under contract with the federal agency found potential problems between 2000 and 2008.¹¹⁰ Yet the FDA infrequently took any action to enforce its standards. Most of the time it just asked the company to voluntarily address the issues, and in a few cases, the FDA turned the problems over to state health inspectors.¹¹¹

Bottled Water Is Not Better Water

In 2007 and 2008, researchers from the Medical College of Wisconsin and the University of Wisconsin-Milwaukee set out to determine what types of drinking water sources contributed to acute diarrheal illness in children.¹¹² They did not expect what they found: children who drank primarily bottled water were more likely to get sick than children who drank primarily tap water that came from Lake Michigan. In other words, tap water from Lake Michigan appeared to be cleaner and safer than bottled water.¹¹³ The researchers suggested that this might be due to contamination of bottled water.¹¹⁴

In 2008, the Environmental Working Group investigated 10 major brands of bottled water and found numerous contaminants that can be harmful to human health, including: disinfection byproducts, caffeine, pharmaceuticals, heavy metals and minerals (e.g., arsenic and radioactive isotopes), fertilizer residue containing nitrate and ammonia, and other industrial chemicals such as solvents, plasticizers and propellants.¹¹⁵

The group purchased bottled water from retailers in nine different states and the District of Columbia, and found a total of 38 chemical pollutants, averaging eight contaminants per brand.¹¹⁶ Nine of the 10 tested brands contained industrial synthetic chemicals, including isobutane, octane, hexane, toluene and acetaldehyde.¹¹⁷ The potential negative health effects of these contaminants include, among others, cancer, liver and kidney damage and neurotoxicity.¹¹⁸

Six of the 10 brands contained nitrate, a fertilizer ingredient associated with blue-baby syndrome and other health problems.¹¹⁹ Blue-baby syndrome occurs when methemoglobin levels in an infant’s bloodstream increase and reduce oxygen transport in the blood, which in turn causes the baby’s skin to turn blue-gray or lavender.¹²⁰ Without treatment, it can cause an infant to fall into a coma and die. Nitrate-contaminated water is the most common environmental risk factor for blue-baby syndrome.¹²¹

Although the nitrate concentrations in the bottled water analyzed by the Environmental Working Group did not exceed the maximum legal limit, nitrate levels below the legal limit may have the potential to harm infants.¹²² Drinking nitrate-contaminated water over the long term has also been associated with cancer, thyroid disease and diabetes.¹²³

Potential Health Hazards From PET Plastic Water Bottles

Single-serve bottled water is commonly packaged in polyethylene terephthalate (PET) plastic.¹²⁴ PET plastic is produced from certain types of petroleum hydrocarbons,¹²⁵ and it contains compounds like benzene, toluene and xylenes.¹²⁶

PET bottles can leach toxins including acetaldehyde, antimony¹²⁷ and formaldehyde.¹²⁸ Acetaldehyde and formaldehyde are formed during the PET bottle manufacturing process.¹²⁹ Acetaldehyde is a “possible” human carcinogen that can cause genetic mutations, and formaldehyde can cause DNA and chromosome damage.¹³⁰ Antimony has endocrine-disrupting effects.¹³¹ High temperatures, long shelf-life and low pH levels may drive toxins to leach into bottled water.¹³²

Although phthalates have been found in bottled water,¹³³ among other contaminants,¹³⁴ the process of how this occurs is not fully understood or agreed upon. As researchers of a study in the journal *Water Research* said, “The origin of these compounds has not been

clearly established and remains controversial ... Overall, it is difficult to compare the reported results due to the variety of parameters favoring the release of substances (contact time, type of simulant, temperature, sunlight exposure and bottle color).¹³⁵

Still, a number of studies suggest the need for caution. Some researchers believe that the concentration of phthalates in bottled water may increase over time in PET bottles.¹³⁶

Exposure to certain phthalates has been linked to developmental and reproductive problems, increased risk of cancer, liver problems,¹³⁷ potential genital defects in males, and decreased testosterone production and male fertility.¹³⁸ Babies are especially vulnerable since they tend to absorb chemicals more easily than adults, and children’s brains and vital organs are at risk because they are still developing.¹³⁹

The World’s People Need Free, Clean, Drinkable Water

Given the world’s growing population and the increasing pollution and overuse of water, the available freshwater supply is becoming more and more limited. A 2009 publication sponsored by the World Bank’s International Finance Corporation, as well as a number of multinational corporations including Nestlé S.A. and The Coca-Cola Company, found that by 2030 global freshwater demand will exceed available supplies by 40 percent.¹⁴⁰

Worldwide, about 1.5 million children under the age of five die annually due to illnesses contracted from contaminated drinking water and unsafe sanitation.¹⁴¹ Approximately 1.2 billion people in the world live in regions with scarce water resources, with 500 million more on the brink of a similar situation.¹⁴²

Another 1.6 billion people face economic water shortages,¹⁴³ which according to UN Water means that their countries “lack the necessary infrastructure to take water from rivers and aquifers.”¹⁴⁴ And what many Americans may not realize is that the United States is not immune from the threat of water shortages.¹⁴⁵ (See Table 3.)

Yet the bottled water industry takes advantage of the water crisis by profiting off of dwindling supplies, selling off the water in our aquifers and commodifying a common resource essential for all life on Earth.

Table 3. Countries Overpumping Their Aquifers in 2012

Country	Population (Millions)
Afghanistan	33
China	1,354
India	1,258
Iran	76
Iraq	34
Israel	8
Jordan	6
Lebanon	4
Mexico	116
Morocco	33
Pakistan	180
Saudi Arabia	29
South Korea	49
Spain	47
Syria	21
Tunisia	11
United States	316
Yemen	26
Total	3,599

SOURCE: Earth Policy Institute. “Countries Overpumping Aquifers in 2012.” September 27, 2012.

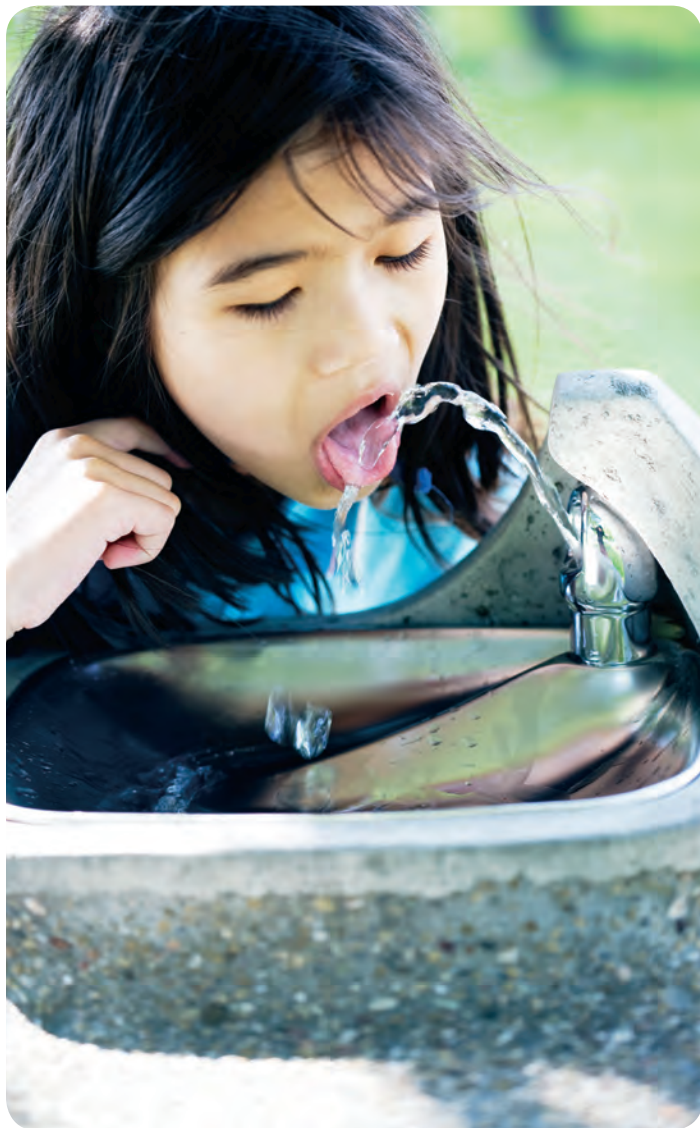
Impacts to Essential Water Resources and the Environment

Bottlers’ groundwater pumping operations can harm local environments and natural resources that communities rely on for well water, farming, recreation and other uses.¹⁴⁶ Groundwater sources are usually connected to surface waters,¹⁴⁷ and when an aquifer is over-pumped, the water levels of a connected surface water body can fall and water flows can change.¹⁴⁸ As a U.S. Geological Survey report said, “Thus, changes in the natural interaction of ground water and surface water caused by human activities can potentially have a significant effect on aquatic environments.”¹⁴⁹

State officials have said that large-scale groundwater extraction, such as for water bottling plants, could reduce the availability of local groundwater and surface water supplies to the detriment of the natural resources that depend on them.¹⁵⁰ When bottled water companies tap groundwater sources, they do not replenish what they pump out.¹⁵¹ This differentiates water bottlers from local irrigation and agricultural water users, who do return water to aquifers.¹⁵²

Producing PET bottles uses energy and releases billions of pounds of carbon dioxide worldwide. Transporting the bottled water across hundreds of miles spews even more carbon dioxide into the air, complicating our efforts to combat global climate change.¹⁵³

The industry uses a significant quantity of petroleum and energy just to manufacture the billions of plastic bottles consumed in the United States each year.¹⁵⁴ A study by



researchers for the Pacific Institute found that the manufacture, production and transportation of bottled water is 1,100 to 2,000 times as energy intensive as the treatment and distribution of tap water.¹⁵⁵ They also found that in 2007, U.S. bottled water consumption had an energy input equivalent of between 32 and 54 million barrels of oil.¹⁵⁶ Over the course of a year, that amount of energy could fuel anywhere between 1.2 to 2.1 million cars, or an average of 1.6 million cars annually.¹⁵⁷

In 2007, 1 million tons of PET were produced to make the plastic water bottles consumed in the United States,¹⁵⁸ and about 77 percent of PET plastic water bottles are not recycled and end up in landfills, as litter or incinerated.¹⁵⁹ This plastic bottle trash can cost local governments a lot of money because they have to pay tipping fees, which are charges applied to a given quantity of waste at a processing facility, like a landfill.¹⁶⁰ In 2012, large landfills charged an average of \$49.27 per ton,¹⁶¹ so with the more than 4 billion pounds of plastic bottles ending up in landfills,¹⁶² municipalities are paying at least \$98 million a year to dispose of bottled water waste.¹⁶³

As one author put it, “Each water bottler has its own version of this oxymoron: that something as pure and clean as water leaves a contrail.”¹⁶⁴

“Water is of course the most important raw material we have today in the world. It’s a question of whether we should privatize the normal water supply for the population. And there are two different opinions on the matter. The one opinion, which I think is extreme, is represented by the NGOs, who bang on about declaring water a public right. That means that as a human being you should have a right to water. That’s an extreme solution.”

—Nestlé chairman Peter Brabeck-Letmathe, during an interview for the 2005 documentary *We Feed the World*.¹⁶⁵

Community Conflict and Nestlé’s Pursuit of Public Water

Nestlé is on the hunt for water across the country. In some cases, the company tries to get spring water at a discount.¹⁶⁶ In the face of public opposition to groundwater extraction, however, the company is increasingly turning to municipal tap water.¹⁶⁷ Companies that extract and sell water from municipal sources often pay less per gallon of water than households pay. Taxpayers and ratepayers essentially subsidize the sale of their tap water for private industry profit.¹⁶⁸

In McCloud, California, for example, Nestlé tried to engineer a deal in which it would have paid about one cent for every 123 gallons of the area's groundwater it mines and then bottles — \$0.00008 per gallon.¹⁶⁹ That was one-third of the normal price. By comparison, the average lease rate for water in the state was one cent per 40 gallons¹⁷⁰ — \$0.00025 per gallon. Because of public opposition, the company gave up on McCloud and instead built a plant in Sacramento to bottle mostly tap water along with some spring water.¹⁷¹

Indeed, many communities have had no option but to go to court to try to protect their water from bottlers. Litigation between residents and bottled water companies has disrupted harmony in communities across the United States — from California,¹⁷² to Michigan,¹⁷³ to Maine.¹⁷⁴ These legal battles can be extremely expensive and time

consuming,¹⁷⁵ and water bottling schemes have torn towns apart.¹⁷⁶ According to a Maine resident who fought for more public oversight of commercial water extraction, Nestlé's Poland Spring has been a bully in the state, harassing and suing people to get what it wants.¹⁷⁷

A legal battle began between a bottler later purchased by Nestlé and citizens in Mecosta County, Mich., in 2001 when the company moved in and began to extract groundwater.¹⁷⁸ The company made an arrangement with one property owner to pump water from their land and obtained a permit for the pumping, but the company did not have to get approval from other nearby landowners.¹⁷⁹

These other landowners opposed Nestlé's plant for a number of reasons including the harmful impacts that operations would have upon the interconnected surface water bodies.¹⁸⁰ Groundwater pumping, in fact, caused water flows in several connected surface waters to fall, and for one local surface water body, the Dead Stream, water levels fell to the point that mud flats developed.¹⁸¹

Nestlé had claimed that if its plant was unwanted, it would leave, but after voters overwhelmingly rejected the zoning changes needed to build its plant, the company found a way around the public's judgment.¹⁸² As a result, the community resorted to raising money to take Nestlé to court.¹⁸³ Even though the state Supreme Court ruled in favor of Nestlé Waters North America,¹⁸⁴ the citizens continued to fight and voice their concerns. Eventually, after nine years of conflict, the two parties settled out of court.¹⁸⁵ Nestlé agreed to lower the amount of water it pumps and to never ask the courts to increase it, but the company was able to keep its plant.¹⁸⁶

Notably, Nestlé's pursuit of water extends to communities in low- and middle-income countries where people are less able to defend their right to water. For instance, communities in Pakistan faced both physical and economic water shortages at the same time as Nestlé mass-produced and profited off of their dwindling water supplies.¹⁸⁷

Pakistan's drinking water comes primarily from groundwater sources,¹⁸⁸ which are reportedly being over-pumped,¹⁸⁹ meaning that the groundwater withdrawal rate exceeds renewable capacity.¹⁹⁰ Reoccurring water shortages are most severe in Middle Eastern and North African cities.¹⁹¹

Yet Nestlé's bottling operations could be further exacerbating limited freshwater resources. For example, the 2012 documentary *Bottled Life* revealed that a nearby Nestlé Pure Life plant was impacting drinking water in the small



Pakistani community of Bhati Dilwan,¹⁹² linking the plant to the community's dirty and declining drinking water.¹⁹³ As *Bottled Life* describes, "...the village fountain water is nothing more than foul-smelling sludge."¹⁹⁴ A former village councilor said that bottling operations drained groundwater levels by hundreds of feet,¹⁹⁵ and many children in the community have become sick from drinking the dirty water.¹⁹⁶

Take Back the Tap, Support the Human Right to Water

The production of bottled water causes significant equity and environmental problems. These include taking water from communities that depend on it, polluting the environment during the production of plastic, contributing to global warming by transporting bottled water over great distances and irresponsibly disposing of billions of empty bottles.

Instead of wasting tax money on bottled water,¹⁹⁷ federal, state and local governments all need to protect the quality and integrity of our water sources.

Although our public drinking water systems are in desperate need of federal investment, we are decreasing public funding for our essential water and sewer systems. Reliance on bottled water may make people less inclined to support public investment in municipal water systems,¹⁹⁸ while benefiting multinational bottling companies. A case in point is a 2009 presentation by Nestlé Waters Chairman Kim Jeffery, where he clearly stated: "We believe tap infrastructure in the U.S. will continue to decline" ... "People will turn to filtration and bottled water for pure water needs."¹⁹⁹

The nation's drinking water pipelines span approximately 1.5 million miles.²⁰⁰ Most of the water pipes under our streets were built at least half a century ago, in the years immediately following World War II.²⁰¹ Now, this water infrastructure is wearing out and many pipelines have already reached the end of their usefulness, with much of the rest expected to reach the end of their useful lives within the next few decades.²⁰²

A 2012 American Water Works Association study found that our drinking water infrastructure needs a \$1 trillion renewal investment by 2035²⁰³; yet the federal government's contribution to water infrastructure improvements has dropped from more than 60 percent in 1977 to less than 7 percent in 2007.²⁰⁴ After receiving a boost in 2010, federal support for our water and sewer systems continued to decline in 2011 and 2012.²⁰⁵

Thus, it is imperative that we invest federal funding in our water and sewer systems to ensure that all people have access to safe drinking water.

The following steps can be taken to safeguard our essential water resources:

- **Consumers should switch back from bottled to tap water and reclaim the clean and affordable resource that flows from our faucets — they should Take Back the Tap.** But it will take national leadership to rebuild America's crumbling water and sewer infrastructure. The federal government must create a Clean Water Trust Fund to generate the money necessary to maintain and improve drinking water and sewage systems.
- **Committing to a dedicated source of funding for our drinking water and sewer infrastructure through a Clean Water Trust Fund is the best way to provide billions of dollars each year to communities so that every person in the United States has safe drinking water.** A dedicated source of federal funding for the Drinking Water and Clean Water State Revolving Fund programs can help communities make vital improvements to their water infrastructure without severe increases in water prices. Unfortunately, federal funding for the State Revolving Funds (SRFs) has fallen since 2009.²⁰⁶ By establishing a federal water trust fund, SRFs will no longer be subject to the fickle annual appropriations cycle.
- **Managing surface and groundwater resources under a statewide commons and public trust framework is paramount.** If water is treated as a commodity, it cannot be protected adequately for future generations. The public trust doctrine puts public interests before private interests. Thus, when a resource is held in the public trust, it is more difficult for private parties to inflict harm.²⁰⁷ The public trust doctrine is rooted in ancient legal principles and enables sovereign states to hold and protect natural resources.²⁰⁸ Under this doctrine, which dates from ancient Rome, running water — just like the air we breathe and the sea — is a common resource.²⁰⁹ Water belongs to the public and should be protected and preserved for the public.²¹⁰
- **Lastly, Food & Water Watch recommends that the U.S. Congress pass legislation declaring water a universal human right.**

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