

Bottled Water: Not a Smart Choice

Weaning Rutgers University Students Off The Bottle With The Installation and Awareness of Water Fill Stations

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Summary:

Bottled water is a huge and unfortunately overlooked problem in today's society. Even people who have access to clean tap water still choose to purchase bottled water. The problems with plastic waste are only just the tip of this growing iceberg. The little to no regulation of water, the constant battle for it across the world, and the chemicals found in the bottled water are all critical issues. By educating the public one by one in places like Student Centers, society can start to make more educated choices about their water preferences. We have developed signage with facts to be placed on water fill stations around Rutgers University to stimulate students to get off the plastic water bottle craze.

Video Link: <http://www.youtube.com/watch?v=64wYRPsDVV4>

Worldwide Conflict with Water (TY)

In 1968, Garrett Hardin explained a phenomenon relevant to our world's problems in a very simple example he called "The Tragedy of the Commons." In this article, Hardin elaborates on this dilemma of multiple cow herders in a field, independent and self-sufficient, who continue to use the same resources. Over time, the field becomes overgrazed and as a result, all of the cows die on the field, leading each herder to a tragic conclusion. The point of this tale is that the herders were not trying to maliciously wipe out any of the other men's cows. However, by not cooperating, they all depleted their natural resources in an effort to build up their own farm (Hardin, 1968). The Tragedy of the Commons is a very common theme found in ecological issues around the world. The issue on water is no exception.

Today, we can see the tragic effects of our overexploitation of water all around the world. Water has always been a natural resource. It is nature's gift, necessary for life, it is limited and must be conserved, it is a commons, no one holds the right to destroy it, and it cannot be substituted (Shiva, 2002). These are all things that the world can agree on. However, companies and governments still see water as a commodity, which can be controlled and exploited. Seventy percent of our planet is made up of water. Only three percent of that water is fresh, drinkable water and only about one percent can be easily acquired for human use (Perlman, 2012). On top of this, both global climate change along with pollution created everyday result in an even smaller percentage of water for the human population to use.

As a result of this, many conflicts have risen all over the world in response to this chilling realization. Countries such as India, China, Ethiopia, and areas of the Middle East are all bringing uproars of various conflicts each day. The World's Water breaks down the problems with water into various categories including control of water resources, water as a military tool, as a political tool, as a military target, as a terrorist target, and developmental disputes of water. All of these issues lead back to state and non-state "actors" who participate and create these problems. (Gleik, 2009). In places such as Somalia, people are being forced to flee, drink unclean water, or fight back due to a "scarcity" of water (Arsenault, 2011). According to the UN, there is enough water on this planet to quench everyone's thirst, but it is so unevenly distributed, that many places are forced to remain thirsty ("Water Scarcity," 2007).

This all begs the question then: Why is it that Americans and other countries that have plentiful, clean, and free water access continue to waste money and other resources on bottled water when other countries around the world lack access? People in these poorer countries are being forced to purchase water by their governments or other private organizations, which drives them to drink unclean water or die of thirst ("Privatization," 2012). This privatization of water isn't something as foreign as Somalia, however. In the United States, every bottle of water purchased sends a signal to bottled water companies to continue the manufacturing of a natural resource, and therefore the rights to ownership that go along with it.

Water is clearly a global issue. We can see the nature-made issues of drought and lack of availability of fresh water. However, man is also driving these issues with his "cowboy economics" of whoever gets the water first gets to own it and do with it as he pleases (Shiva, 2002). These mindsets and natural crises have set governments and companies worldwide to begin to privatize this natural resource that is so necessary for life. Perhaps by lessening the purchase of bottled water we can begin to send a signal to these companies to loosen their grip on our water. This may be a small solution to the global scale issues, but it is definitely an important step.

Government Regulation: Red Tape to Find Out What's In Bottled Water (DS)

Bottled water is a beverage that has been continuously growing in consumption alongside population growth. Its total sales in the United States have grown and more than doubled between the years 1998 and 2002, according to MarketingResearch.com. In addition, the Beverage Marketing Corporation, expects bottled water sales to surpass those of soft drinks within the near future, if this hasn't already happened (Posnick and Kim, 2011).

Bottled water and tap water are regulated by two different government agencies in the United States. The FDA (Food and Drug Administration) handles Bottled water, while the EPA (Environmental Protection Agency) monitors tap water, which is also known as municipal water or public drinking water (Posnick and Kim, 2011). The EPA's Office of Groundwater and Drinking Water has regulations on the production, distribution, and quality of drinking water. These standards also extend to source water protection, operation of drinking water systems, contaminant levels and reporting requirements (Posnick and Kim, 2011). Unfortunately, regulation or enforcement of regulation of bottled water, despite being held to the same standards as public drinking or tap water, is usually not upheld or enforced. Under Title 21 of the *Code of*

Federal Regulations, the FDA has specific regulations put in place for bottled water (Posnick and Kim, 2011). These include standard of identity and standard of quality regulations. Standard of identity regulations differentiate between different types of water, such as spring or mineral water. Standard of quality regulations, however, establish allowable levels of certain chemical, physical, microbial, and radiological contaminants in bottled water. The FDA has also established Current Good Manufacturing Practice (CGMP) regulations for processing and bottling bottled water. Bottled water is one of the few foods that the FDA has specific CGMP regulations in place for and it has a high standard of quality for bottled water. It is clear that there are viable regulations for bottled water and it is viewed as something that must be overseen (Posnick and Kim, 2011).

The FDA treats bottled water as a food under the Federal Food, Drug, and Cosmetic Act (FFDCA), which gives them the power to oversee and regulate the introduction or delivery of food into interstate commerce. However, approximately 70% of bottled water does not cross state lines and is therefore not subject to regulation nor is being monitored for contaminants or other safety flaws. This major loophole allows bottled water companies and plants to avoid having their products checked or subject to most rules that are deemed necessary to ensure that the product is safe for human consumption.

The EPA and FDA also have set standards for required levels of fluoride in drinking water in order to help prevent tooth decay and promote general health. Nevertheless, concerning bottled water, specifically, there is a reason to worry. Fluoride levels are only required to be checked once a year (although enforcement of this may be a bit weaker than necessary), for all bottled water companies. This would explain why the fluoride levels are usually lower than necessary and generally lower in samples taken from bottled water compared to samples taken from municipal drinking water sources (Lalumandier and Ayers, 2008). If anything the law should require that bottled water companies have to test their water for bacteria/contaminant and fluoride levels monthly, and the FFDCA should be altered to say that even if a company's plant is selling within state lines, it still needs to be checked and upheld to the same standards as bottled water that crosses state lines (which is only 30% of total bottled water that is produced and consumed).

Tap Water Versus Bottled Water (DS)

One of the most critical questions to answer is whether bottled water or tap water are safer/cleaner than the other. It has been proven time and time again that the tap water in our area, as well as in most, if not all areas of the United States, is safer and less contaminated than any brand of bottled water. The Government Accountability Office (GAO) found that the safety and consumer protections for bottled water, put in place by the Food and Drug Administration, are often less stringent than comparable standards for tap water, set by the Environmental Protection Agency. Thomas Kostigen, in an article titled, "Tap Water Safer than Bottled", mentions how the GAO, in a new report, says that regulations put in place by the individual states to protect bottled water often exceed the FDA's, but they still are not as thorough as they need to be (2009). It is fair to say it is disturbing that consumption of bottled water in the past decade has skyrocketed, meanwhile the regulations put in place for it are far too lenient and bordering on negligence. Safeguards put in place for bottled water are less stringent than those set for municipal drinking

water. In addition, 70% of bottled water is exempt from inspection and regulation, simply on account of the loophole that the water does not cross state lines. This means that only 30% of all bottled water ever consumed by any of us, was actually up to the sub-par regulations set forth by the FDA (70% was not acceptable to drink). Sure enough, this is an eerily disturbing truth to digest.

One example in Kostigen's article that really stood out was the blind taste test conducted all around the country in 2008, in which people were tested to see if they could tell the difference between plain old tap water, and water right out of the bottle of very expensive high-end water brands. Surprisingly, tap water won most of the time (Kostigen, 2009). Even the National Resources Defense Council has been on the bandwagon for bottled water safety, going as far as lobbying for labeling. Currently, bottled water is not required to provide labels with a list of ingredients and nutritional values. It is interesting that we must label water, but the GAO fully supports this as well. The GAO says that bottled water, just like other foods, is upheld to strict standards of quality against misbranding (Kostigen, 2009). In 2000, according to the GAO, the FDA deduced that it was possible for the bottled water industry to provide the same types of information to consumers that public water systems have been providing every year. The FDA, however, not being required to make rules stating that manufacturers have to provide this information to consumers, has not done so. It is sad that just because the FDA was not forced to do something that would be universally good, that they didn't take the extra effort to do so. I understand that this agency (and people in general), cannot work 24/7, but when it's literally one's job to make sure that bottled water is clean, putting in extra effort should not always be required. They should want to do everything in their power to make our drinking water as clean as possible. To explain this quote, labels could in fact be put on bottled water requiring that consumers know where the water comes from, what type of water quality testing, if any, has been done, and what may have been added to the water for treatment. As of now though, these labels are still not required by law (Kostigen, 2009).

There are plenty of reasons for why tap water is a better choice than bottled water, in terms of household/consumer economics, natural resource economics, sustainability, health, and safety. For example, bottled water contributes to excessive waste. Over 80% of water bottles are thrown away and it takes three liters to produce one liter of water, which is a negative marginal cost on the environment (Karlstrom and Dell'Amore, 2010). In addition, bottled water costs so much more than tap water and is no cleaner or safer than tap water. If anything, bottled water is subject to more contamination and less inspection on average than municipal drinking water sources in the US.

Stealing Local Water (DS)

Bottled water companies are in essence stealing water from local communities. While some argue that this has the potential to affect the water supply on a national level or global level, most disagree and say that Nestle pumping a single spring in one state will not drain our groundwater supply on the national level, but it will have the capacity to hurt or even destroy the water supply and quality of local communities (Lenzer, 2009). It can be deduced from various factors that bottled water companies are indeed hurting water in small communities, and also, that they are slowly but surely hurting things on a national level. It is one thing if each company

has a limit of the number of springs it can buy, but since there are not strict or environmentally conscionable limits, companies own tens or hundreds of springs with such rights that border on exploitation (Lenzer, 2009). Since this door of water wars (companies are literally trying to buy up as many springs and water sources as they can in order to have majority control of or rule the market), has been opened, and is currently being fought, slowly but surely, bottled water is beginning to affect water on a national level, and we will see serious ramifications of these actions no later than 2030.

Fiji: a Lesson to be Learned (DS)

One company, Fiji, is a prime example, although internationally, of how a bottled water company totally ruins a beautiful, clean, and relatively non-tampered water supply and negatively affects the surrounding community and residents in the process. Fiji is a set of 300 breathtaking islands (200 of which are uninhabited) in Melanesia in the South Pacific Ocean, Northeast of New Zealand (Lenzer, 2009). The Fiji Water plant rests in the volcanic foothills of the Yaqara Valley, located in Suva, Fiji (Fiji's capital city). The atrocities of Fiji have been attempted to be masked, but Lenzer's article still brings out some pretty clear and vivid signs of how the company has exploited the land, water, and people of this once great country. The article mentions that it takes a grueling four hour trek to get to the Fiji Water plant. Lenzer discusses making a rest stop at a small dusty town full of small shops called, Rakiraki (Lenzer, 2009). Water has been declared unfit for human consumption in this town, yet shops are stocked full of bottles of Fiji Water, which are selling for 90 cents a pint, almost as much as they do in the US, which is about three times more than other bottled water brands (Lenzer, 2009).

Rakiraki has unfortunately experienced the full range of negative effects, resulting from problems caused by Fiji Water's presence in the country. Just some of the problems that resulted from Fiji Water are dysfunctional and flooded water treatment plants, crumbling and cracking pipes, a lack of adequate wells as well as supplies in existing wells, and droughts that are only expected to get worse with the pressure that humans are putting on our environment, and the resulting climate change (Lenzer, 2009). At times, half of Fiji has had to rely on emergency water supplies, with rations as low as four gallons of water per week. It would be a lie to suggest that a normal, healthy family would use less than this amount for cooking and drinking water alone. This is very sad when we consider that an average American uses 100 gallons of water a day, between drinking, cooking, showering, and toilet needs.

Regardless, it is not surprising that these sorts of instances are occurring in Fiji, considering that the Fiji Water brand is over-pumping the aquifer(s) that it has access and essential complete control and ownership of. This is how the company is stealing water from local rural towns and communities. Prior to having their local water sources sold by their corrupt militant government (which has seen at least four coups in the past 25 years), the native residents of Fiji could not have imagined a day where a foreign group of outsiders would come in and literally buy and take their sources of water away from them. The majority of the population is comprised of sugarcane farmers and descendants of early Indians that were brought to Fiji along with British colonists. Thus, it is clear that wealth is not vast and distributed evenly in the country, so the question is what are these rural farmers, coconut gatherers, and residents supposed to do when it is clear that they cannot gather the money to out buy the Fiji company

(even if they tried)? Clearly, other than revolting, there is not much that residents can peacefully do, and Fiji Water obviously knows that, sees the corrupt opportunity at hand, and chooses to leap forward and exploit it along with the land, water, people, and general environment and health of the country.

Chemicals in Bottled Water (MN)

It is unclear to many just what exactly is in bottled water nowadays. There are countless companies that create new name brand water bottles each day, many of whom simply fill bottles with unregulated liquid water. Looking at the Environmental Working Group website, a list of popular chemicals and other pollutants in bottled water can be found, which makes one wonder how many ingredients are actually in water, since it is known that so many companies are hesitant to reveal all the chemical additives they use. It was stated on EWG's site that 10 popular U.S. brands contain impurities like bacteria, fertilizer, Tylenol, and 35 others pollutants. It is quite clear that the regulations and standard testing for safety cannot be trusted when it comes to healthy drinking water (Naidenko, 2008). Acadia brand, for example, contains high levels of cancer-causing chlorination byproducts. These same harmful chemicals are found in Washington DC tap water, where, it is learned, the bottled water is actually made (Naidenko, 2008). Countless companies today promote the purity of their water and claim to have gotten it from the "cleanest wells in all the land", when in reality some of the toxins in tested bottled water is close to levels of chemicals found in the most polluted tap water systems in the nation.

By marketing bottled water to be purer than tap water since perhaps the 80's, it is no wonder that the common consumer does not understand that there is no reason to pay for an overpriced product that many brands are just filling with cheap, polluted tap water. If consumers actually knew the pollutants contained in the bottled water they are drinking they may think twice before buying it. Table 1 has a few well known contaminants that have been found in some brands of bottled water.

Table 1.

Caffeine	Arsenic	Chlorine
Pharmaceuticals	Radioactive isotopes	Fluorine
Heavy metals	Industrial chemicals	Fertilizer residue

Many people buy bottled water because they have weak immune systems or are sensitive to different types of liquid. They have good faith in the companies claiming to sell them purified water when in reality they are making consumers vulnerable to infections and other health risks by not actually telling them what is in the water they are drinking. A few chemicals that the government may claim to have regulated can also be misleading, contributing to individuals' confidence in the safety and quality of bottled water. The problem with this is that while some

chemicals in one group are safe, there are several others in that same group which are not. Toxic Disinfection byproducts, or DBPs, are a group of chemicals like chloroform, bromodichloromethane, and haloacetic acids, all of which have shown to contribute to bladder cancer in several studies. Being exposed to DBP is also being studied to possibly be associated with reduced birth weight as well as miscarriages. Rectal and colon cancers, kidney and spleen disorders and neurotoxic effects are also risks that come with DBPs (Leiba, 2008). These chemicals are a result of the mixing and treating of drinking water that is next packaged into bottled water. While 11 of these DBPs are not considered harmful, what people don't know is that there are over 200 DBPs! (Leiba, 2008) This is extremely misleading to consumers, and possibly to regulators, as well, who may not know the difference between safe and harmful DBPs.

Another chemical that many individuals also do not know about is antimony, and the reason for this is that although it is not in the water at the time of production, the toxic element is released from the plastic over time and contaminates the water. It is not quite sure how long it actually takes for the antimony to start contaminating the water, though it can cause nausea, dizziness, and depression after just a short period of contamination (CBC, 2006). If one was to examine a bottle of water, they would not see an expiration date or shipping date, which does not inform consumers how long the water has actually been sitting in that plastic bottle. Companies that ship the bottles from other countries may have water bottles sitting around for well over six months without consumers knowing a thing. The amount of antimony that would be present in a bottle of water after six months can be fatal! (CBC, 2006) The toxins like these that develop over time are even more harmful because they indicate how old a product actually and, in this case, how unsafe the plastic being used is, if chemicals are able to pollute the water.

Consumers are being made to believe that bottled water has been cleaned and purified to compare to water from springs but in reality a countless number of companies are using a mixture of tap water and purified water. It is so simple to find what chemicals are in actual tap water due to state regulations on publicizing test results, while it is near to impossible to contact a representative of a bottled water company to discuss such matters (Naidenko, 2008). The bottled water companies, unlike public water institutions, are also not required to inform customers of any contaminants in their water. They do not have to notify consumers where they get the water from, how pure it actually is, or if indeed it is spring water.

Bottled Water: A Waste of Money and Resources (MN)

The amount of time and energy that goes into making bottled water may be worth half of what companies are charging, but in comparison to the tap water that the consumer is actually buying, it is worth about a 1,900 times less than the prices marked (Doole, 2001). This "necessary" convenience has caused the bottled water industry to make billions while the consumer does not even get safe, quality water. The U.S. today charges about \$3.79 for a regular gallon of water. The companies that simply use tap water along with other "minerals and salts" pay less than a penny to actually get this water, giving them an enormous profit. The most expensive water is a bottle called Bling H2O which was designed by a Hollywood writer that costs around \$45-60 and has become common at award shows and for athletes (Fuller, 2007). While it is purified in a 9 step process and is definitely considered safe drinking water, do

companies really expect the public to pay this much for bottled water by perhaps trying to make it the norm?

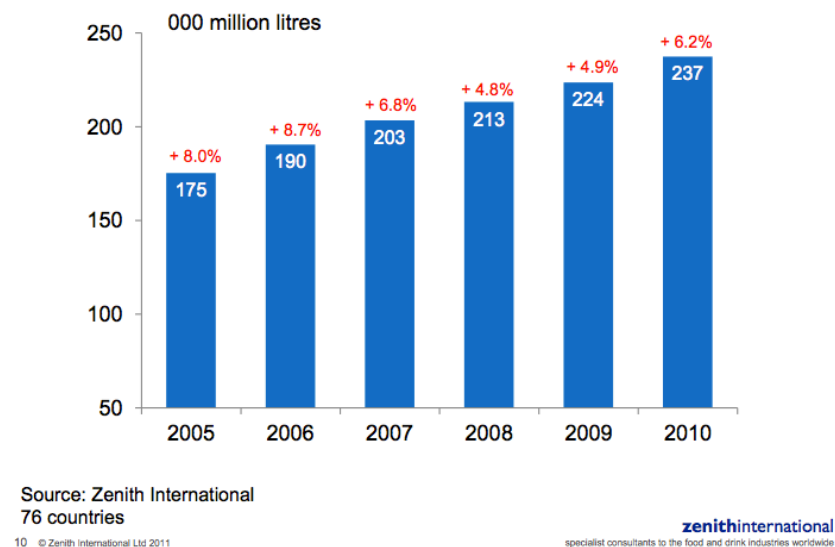
Unfortunately another norm that is also in place is the lack of recycling water bottles. While the efforts to “go green” have increased, 90% of plastics, a majority of them being water bottles, is still not recycled and is either thrown out or littered (Crystalline Water). With this percentage already being so high, it corresponds to the large percentage of volume that plastic water bottles also takes up in landfills, twenty five percent (Crystalline Water). Water bottles take over a 1,000 years to biodegrade and with the increasing usage of this product, it is hard to say how the world will be able to keep up with its own garbage. Biodegradation is extremely hard to even take place in landfills due to the tightly compacted materials. This slows the process down even further and leads people to take more risk-taking actions like incineration and the releasing deposits of toxic chlorine into the air (Crystalline Water). Not only is bottled water misleading to consumers who believe all brands are safe to drink, but the aftermath of using plastic water bottles is also harmful to the community and the planet as a whole.

The amount of resources that goes into making bottled water is also rather astonishing and would make consumers think twice before buying any more plastic water bottles. About 1.5 million tons of plastic is used to solely make water bottles per year. The way these bottles are made is from a nonrenewable resource polyethylene terephthalate, which is oil-derived (Crystalline Water). According to the Crystalline Water website, it takes almost 1.5 million barrels of oil to make these plastic bottles, and that statistic is only for one year. This is enough to fuel over 1,000 cars for an entire year. The amount of resources that are being used a day for a product that is simply a convenience to consumers and filled with liquid that is even less valuable than the bottle itself is exemplifying humankind’s stupidity, selfishness and greed.

Bottled Water in the Media (TY)

In 1903, the mineral water spring and spa, *Les Bouillens*, was bought up by Sir St. John-Harmsworth and was renamed *Source Perrier*. After this, the sparkling mineral water found in this spring was bottled in distinctive green bottles and spread rapidly around the UK and United States. It quickly became the latest trend with people and was considered a “refreshing, all-natural, alternative beverage” by people all across the US. (“Perrier...,” 2011). Based on the chart below, it seems that people have become rapidly involved with this new craze of bottled water (Hall, 2011).

Global bottled water volume, 2005-10



The United States is the largest consumer of bottled water in the world next to Mexico, China, and Brazil (“Changing Consumer...,” 2008). Currently, the top selling brands of water are Dasani (Coca-Cola), Aquafina (Pepsi), Nestle, and Evian. All of these brands have become household names and have expanded to fit our “needs” in the past few years. Ever since the outbreak of bottled water, the media has been making sure that we “know” that bottled water is “better, fresher, cleaner, and tastier” among other things. Scaring the public into thinking that tap water is not as good for you as bottled water is what is known as “manufactured demand.” Fiji ran a magazine ad in 2006 saying, “The label says Fiji because it’s not bottled in Cleveland” (“Cleveland Takes Offense...,” 2012). In 2000, PepsiCo spent over \$10 million on marketing for Aquafina alone (Hays, 2000). Companies also take the initiative to fool the public into thinking that their water is from beautiful mountains (as seen on Poland Spring’s wrappers). But about 30% of all bottled water comes right from the tap, especially from brands like Dasani and Aquafina (Leonard, 2010).

Now that the bottled water companies have brainwashed the country into thinking that their product is necessary, less ads have been seen and different tactics have been used to help spread products. Celebrities are now being used to promote different bottled water companies - for example, Jennifer Aniston and Tom Brady are spokespeople for SmartWater (Selwa, 2010). Bottled water is also seen more often on television shows in an effort to promote a “healthy lifestyle.” Companies also force water on to people in local places such as gyms and student centers with easily accessible vending machines with stunning advertisements all around them.

Companies are also coming out with mineral waters, claiming to be healthier for you than other water. Studies show that mineral water may contain nutrients that our body can use, but most of them will not be absorbed and the water may be just as effective as tap water (or taking a daily supplement!) (Owen, 2006). Even with “fancier” water that costs exorbitant amounts of water, people seem to agree in blind taste tests that tap water, in fact, tastes better. The psychology of drinking “fancy” water makes it seem like it tastes better, when in fact, one is

paying for a natural resource that can come cleaner and tastier from the tap (“Is Bottled Water...,” 2012).

Luckily, there is an alternative to all of this. By purchasing a reusable bottle (free of harmful chemicals, of course) one can take the initiative to decrease the stress that these companies have on bottled water. Companies such as Bobble and Brita have developed a bottle that filters water as you drink it, making water on the go much more accessible and convenient. With all this focus on bottled water, we tend to hoard all of the resources in places that have completely clean, accessible water from the tap. Instead, we should be pushing our efforts and these bottles of water to areas that do not have such clean water. With hope, these companies can continue their ad campaigns and we can see more people with reusable bottles, rather than the wasteful and harmful bottled water.

Fill Station Awareness (TY)

Bottled water is slowly becoming an epidemic in our nation and the biggest problem is that most people don’t even know about it. From a general observation, most people tend to purchase bottled water because it’s “more convenient” for them. Apparently, lugging around a 13 pound case of bottled water is more convenient than simply filling up a small canteen. However, the real issue may lie in the fact that people just generally don’t know that bottled water is an issue. In fact, most people think that bottled water is cleaner and fresher and better tasting (we can thank the marketing campaigns of these companies for that). By educating the public on the previously mentioned issues of bottled water, perhaps we can all slowly make the shift towards the use of municipal water over the privatized and under-regulated bottled water.

Our group has decided to take the initiative in educating the public about these issues. The Rutgers University campus in New Brunswick, NJ has recently installed canteen fill stations at each student center and gym. These fill stations allow for an easy, fast, filtered, cold, and automated refill of water to any bottle or container.

NJPIRG was the group that originally proposed the fill station installment in the Spring of 2011. Since then, 12 fill stations have been installed at all of the student centers, all of the recreation centers, and some of the libraries on the New Brunswick campus. Green Purchasing was involved at every step of the purchasing of these fill stations. Take Back the Tap (an organization part of NJPIRG) received a \$5,000 federal grant to put up four of the stations. The remainder of the money was allocated by student funding, which was approved by the Rutgers University Student Assembly (RUSA). Rutgers has a policy of bidding for competitive prices when purchases are over \$5,000. Other than cost, Rutgers looks for quality, customer focus, innovative business solutions, and technology advancement in all of their purchases from suppliers (McMellon-Wells, 2008).

Rutgers purchased their fill stations from a company called *Elkay*. This company provides various water filters, taps, and coolers to schools, businesses, and homes. The stations that Rutgers installed are the “EZ H2O Cooler Kits” and cost about \$1,200-\$2,400 each depending on the needs of that particular station. For more information about these products, visit www.elkayusa.com. *Elkay* has installed fill stations in over 150 universities nationwide and

they are still growing. These stations have spread to airports, parks, and even concert tours with pop musicians (Koch and Marohn, 2011). Other water fill units are currently being sold from companies such as *Halsey Taylor*, *Oasis*, and *Brita*. The University's Facilities and Mechanical Maintenance installed the fill stations by retrofitting previous water fountains around campus. Rutgers plans to continue to install these stations at places of student congregation as more funding becomes available.

We think that these fill stations could be used to an even higher potential. In places such as the Cook Campus Center, where the fill station is located upstairs and a bit hidden from daily traffic, there isn't "advertisable access" to a place for someone to fill up their canteen. In fact, it seems easier to just visit to campus center's store and purchase a bottle of *Aquafina*.

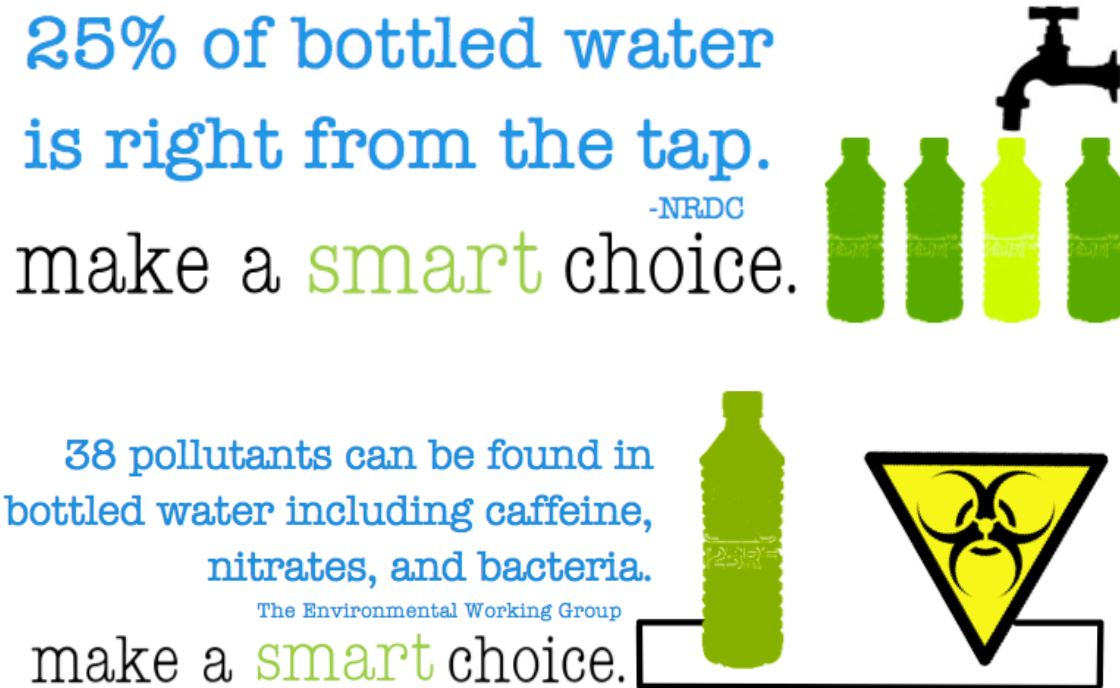
As a result, we have decided to place small reminder signs next to some vending machines that dispense *Aquafina* around campus to tell potential customers that there is free water at a nearby fill station that is clean and just as good as the bottle they are about to purchase. This will hopefully encourage people to stay away from purchasing this bad product and turn them to making an educated decision on their water choices.

cold
and filtered
free
water is not too far!
visit the water fill stations located in this building!
Class project: eEthics in Science with Dr. Julie Fagan

Other problems, as mentioned before, are that the public doesn't really know of these issues and naively go about purchasing these bottles without being informed. Knowing this, our group has made the initiative to install small, informative signs above each fill station in order to educate the public on bottled water issues. Each sign would have a short fact, a picture to embellish this fact, and a prompt asking the reader to make a smart decision in their water preferences.

The design of the signs was to be eye catching, yet minimal. Each sign was to supply a single "shocking" fact about bottled water and the words "Make a **smart** choice." The purpose, of course, is to encourage readers to make decisions in their everyday lives based on a complete survey of information. These words would be accompanied by a small, minimalist picture that

depicts what the fact is saying with as much propaganda - without spilling into myth - as possible. In order to attract a person and change their minds about bottled water, one must fight fire with fire in the war on advertising. Here are two examples of the signs that would be installed in lamination at the size of a typical bumper sticker directly above the fill stations at these campus centers (see the appendix for the remaining signs we created).



The process for approval of these signs is surprisingly tedious. Contacting the campus centers around Rutgers, we found that even though the directors don't have a problem with the content or presence of the signs, they needed us to cooperate with an organization or department. Knowing this, emails were sent to Rutgers University Student Assembly (RUSA), who initiated the installment of these fill stations. The email was sent to the president and the general assembly. The proposal reads as follows:

Hello!

My name is Thomas Young and I was referred to you by Matt Ferguson about a proposal I'd like to bring up. I am currently taking a Colloquium class in Ethics at Rutgers and my group is doing a project on the bottled water epidemic. We were informed that RUSA was responsible for installing the water fill stations all around campus. We think this is an excellent addition to our campus, but we don't think they are being used to their potential. The problem comes with awareness. Students and faculty may not know the issues at hand with bottled water. As a solution, we'd like to install small signs above each fill station stating a small "shocking" fact about bottled water and asking the reader to make a "smart choice" in their water preference. Along with this, we'd like to make a map of the campuses or campus centers as to where the fill stations are located. This would

inform First Years along with inquiring students and faculty as to exactly where these stations are located. Matt Ferguson suggested putting the map with the new Rutgers Guide App on smartphones. Please let me know if this is something that RUSA would be interested in. I've communicated with some of the student centers and they said that they would be interested in these signs if an organization put their logo on them. Being that RUSA was the organization to install the fill stations, I think it would only be appropriate to have RUSA's name on these signs. Attached are some examples of signs that we'd like to post (preferably in a more permanent fashion).

Thank you so much for your time and I look forward to hearing from you.

Thomas Young

RUSA's advisor, Lori Smith responded to us letting us know that the board was on a retreat without much internet access. Therefore, we would probably hear back from them after the project dates had finished up. However, Ms. Smith explained that the board would most likely agree to putting up our signs, maintaining them, etc. A phone call was received from the President of RUSA, John Connelly, explaining that this is definitely a project that he'd be interested in. He scheduled the group for a meeting with the assembly in early September when students have returned from their recess. Hopefully we can convince them that this project is cost effective and very low risk, but produced a very needed result.

Our group also reached out to other departments that may want to participate in such an endeavor just in case RUSA declined our proposal. The Human Ecology Department of Rutgers was reached via email and the department chairman and curriculum coordinator discussed whether or not they would allow the department name on our signs. The chairpeople recommended that we team up with a student organization in order to ensure the signs are maintained. After this, the Students for Environmental Awareness were contacted. As of now there has yet to be a response. Take Back the Tap, a subset of the New Jersey Food and Water Watch was also contacted and again a response has yet to be heard.

As this project continues, we hope to find a student organization willing to put their names on these signs and help us post them around campus. Perhaps when the school year picks up in the fall, more organizations will be able and willing to communicate with us about our ideas. This whole experience goes to show that sometimes just getting in contact with a group can be extremely difficult, let alone seeing a project to its end. It becomes a tricky endeavor when people don't necessarily want to take the responsibility of making a claim in print.

Our group went ahead in creating a few sample signs to hang up at the Livingston Student Center at Rutgers without approval of a student organization. We just indicated that these signs were made for a class service project and we expect that the signs may be taken down soon without approval. Luckily, New Student Orientation was taking place in the student center as we were installing the signs. Hopefully first years will have a chance to be informed before the signs are taken down. One fact sign was placed over the water fill station.



The sign explaining that there is “Cold, filtered, and free water” located right in the building was placed next to a Pepsi vending machine, which dispenses Aquafina.



Finally, we found that upstairs, there was an automated water fountain near some bathrooms for the convenience of students and staff studying in that area (also made by *Elkay*). We decided to place another fact sign above this station informing users that they are making the right choice.



Hoping that we hear back from RUSA in a positive way, the group plans on continuing our project in putting up these signs with a budget and an organization to make sure that the signs stay maintained. We hope that these signs will be posted in the near future in order to spread the word about the issues that face us with bottled water and to ultimately encourage the people in our society to begin making smart choices not just in their water preferences, but in everything they do.

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Letters to the Editor:

The Sparta Independent (TY)

To Whom it May Concern,

I am currently a student at Rutgers University and I am studying the problems that our world is currently facing with bottled water. The group that I am working with has researched many of its issues and we are working towards raising awareness on the Rutgers campus in New Brunswick. We plan on working with a student organization on posting signs across campus explaining to students and staff that bottled water is an issue for various reasons. We'd like to also promote the knowledge and whereabouts of our recently installed canteen fill stations around campus centers and gyms.

The issues with bottled water range much farther than plastic disposal. While tap water is under the supervision of the Environmental Protection Agency (EPA), bottled water is considered a “food” and is under the supervision of the Food and Drug Administration (FDA). Therefore, bottled water is only regulated if it crosses state lines and only about 30% of it does. As a result, there is not too much known about what is in these plastic bottles. Research has found about 38 different contaminants in the ten leading bottled water brands. It has also been found that about 25% of bottled water is merely tap water put into plastic – sometimes not even filtered

On top of the issues of the water itself, privatizing this water will be an issue in years to come. Already across the world governments and companies are putting price tags on local water sources, forcing people who cannot afford it to drink unclean water. Wars over water – a natural and necessary resource – may not be too far off in our future.

Raising awareness about this issue is key to finding its end. By educating the public on the problems of bottled water, they may begin to switch to drinking tap water. Tap water is a resource that is clean or easily filtered, regulated daily, and almost 2,000 times cheaper than bottled water. The population of Sparta, for example, has no reason to purchase bottled water because they have access to perfectly clean water right at their tap. Save the bottled water for those who really need it. I urge the readers of this to make an *educated* decision in not just their water preferences, but in everything they do.

Thank you for your time,
Thomas Young

Note: This letter was published in the Sparta Independent on July 26th, 2012.

<http://spartaindependent.com/apps/pbcs.dll/article?AID=/20120723/OPINION03/120729996/-1/OPINION/Make-an-educated-decision-about-water-purchase->

The Star Ledger (DS)

To the Editor,

My name is David Smoroda and I currently study Environmental and Business Economics (undergraduate) at Rutgers University in New Brunswick, NJ. For a Summer Class, me and my group have been studying the negative effects of bottled water, as well as solutions to these problems. Currently, we are working with a couple student organizations in order to gain permission to post signs across the Rutgers New Brunswick Campuses, that raise awareness about the problems of bottled water. In addition, we plan to promote and get the word out as much as we can about our canteen refill stations, which will allow students who use canteens, access to free, safe, and refreshing water. Also, they will encourage students to use environmentally friendly canteens instead of buying bottled water.

The problems with bottled water are limitless, but there are a few main recurring themes. For example, regulation of bottled water has long been a problem thanks to a loophole in the Federal

Food, Drug, and Cosmetic Act under the FDA. This loophole allows bottled water that does not cross state lines (about 70% of all bottled water falls under this category), to be exempt from any inspection, testing, or regulation. The EPA actually only regulates tap or municipal drinking water, whereas the FDA regulates bottled water and treats it as food. In addition, statistics show that approximately 25% of bottled water is simply tap water that has been put in a potentially toxic container (in terms of how the chemicals from the plastic are infused into the water over time and through exposure to light and heat), plastic and resold for over 100 times the actual value to the public.

A big problem that lies outside of what is actually in the water or how its regulated, is the privatization of water. It is an all too common event that water companies go into small rural or tribal/native villages internationally and literally steal the water from the indigenous people who have relied on it for centuries. Technically, these companies have the deeds and rights to the water, because they pay vast sums of money to the government which is usually unfortunately quite corrupt (countries like Ecuador, Fiji, and even in areas like McCloud, CA in the US). The people whose water is being stolen (in addition to the underlying damage to their surrounding environment that they live off of), are not seeing a single penny of the ridiculous profits that their corrupt governments reap.

There are several general things that we can see as solutions to the problems of bottled water. The most obvious and most likely first step to be taken is that of raising awareness as much as possible, which is one of our goals. Most people agree that the problems of bottled water are real and have serious implications for our environment, health, safety, and human rights. Nevertheless, some people still do not agree or are simply lacking the education and awareness of the problem that exists, as well as the underlying possible solutions. Imagine a utopia where bottled water is saved for only those who truly need it (for example, someone trekking into the jungle without access to a portable or mounted water filtration system), and where a unifying goal to create safe, healthy, fresh, and free municipal drinking water for all, establishes such a system, which does exist in certain areas already. New York City, is said to have some of the best tap water, which one would not probably imagine is true when they first heard it. I urge the readers, whoever they may be, to make a step towards reusable water canteens as well as making a simple goal of trying to gradually use more environmentally friendly processes in their daily lives.

Thank you for your time,
David Smoroda

Verona-Cedar Grove Patch (MN)

Dear Editor,

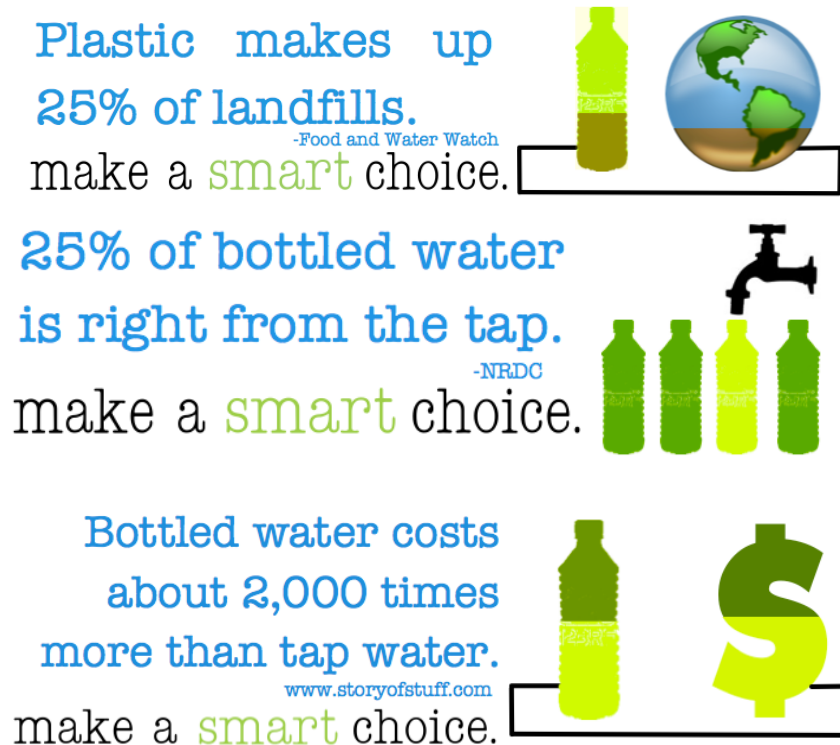
I am a Rutgers student and I am doing a proposal project for one of my classes. We have been discussing topics that we feel very strongly about and what we can do to change this. I wanted to express my concern about bottled water and how ignorant people really are about wasting resources and money on a liquid that they can get from their own home for free. While bottled water may be seen as a “necessary convenience” nowadays, there are many alternatives that can

save our planet and provide safe drinking water for citizens as well. I am sure several people did not know that 70% of bottled water companies are not even approved for regulation and are simply selling tap water with added “minerals and salts.” Another fact that is also important to know is that reusing water bottles is more harmful than drinking tap water due to the chemicals disintegrating off the plastic and into the water, contaminating it. Bottled water has a staggering number of cons compared to pros, but the major problem with the present-day community is that they do not know them, nor do they do the research to find out. Simply buying a canteen or learning about the risks of bottled water will show consumers just how unnecessary it is to purchase bottled water.

The Rutgers New Brunswick community has slowly but surely been doing just this. Filling stations have been placed in all the major libraries and student centers as well as large recycling machines to make it more convenient for students to be environmentally-friendly. My group has also decided to post fun facts, like the ones I mentioned above, on top of the water stations to remind students of the dangers of bottled water as well as commend them on filling their canteens instead of purchasing a bottle of plastic. I would urge readers to take a proactive role in helping prevent the plastic ocean we are slowly creating by dumping hundreds of million tons of plastic water bottles into.

Thank you for your time,
Manikaa Nayee

Appendix - Bottled Water Signs



70% of bottled water is exempt from FDA oversight.
www.drinklocaldrinktapi.com
 make a smart choice.



You could fill 1/4 of a water bottle with the amount of oil it uses to make it.
www.tappedthemovie.com
 make a smart choice.



The cost of one case of bottled water could supply a person in Africa with clean, safe drinking water for a year.
 -The Water Project

make a smart choice.



38 pollutants can be found in bottled water including caffeine, nitrates, and bacteria.

[The Environmental Working Group](http://TheEnvironmentalWorkingGroup.com)

make a smart choice.



Over 80% of plastic bottles are thrown away.

www.your-water.net

make a smart choice.

