Regulating the Extraction of Water for Bottled Water to Prioritize the Environment and Communities

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Abstract:

Environmental law governs the production of bottled water only insofar as it regulates the quality of the water, but there are no current federal regulations regarding bottled water production with respect to environmental and community impacts of extraction from groundwater resources. Several bottled water companies, including industry powerhouse Nestlé, extract water from a public resource and bottle the water to sell for profit outside of the state from which the water was extracted while nearby communities struggle with water use, access, and quality. The rates at which these bottled water companies are permitted to extract water is far higher than is ideal for the water sources to recharge. In this paper, I argue that the government should create policy that restricts the boundaries of the sale of bottled water produced via extraction, implements a licensing fee or tax system that reinvests in the community, limits the granting of extraction permits or reduces the amounts allowed by existing permits, and, ultimately, prioritizes providing safe drinking water for local residents.

Introduction:

Americans have consumed bottled water for centuries, largely motivated by the belief that bottled water is healthier and safer than tap water. For the vast majority of Americans, this belief is a myth, with bottled water being a mere marketing campaign. Aside from negative impacts of the plastic waste on the environment and the quality of the water, the production of bottled water can be extremely harmful to local and ecological communities. Americans consumed 14.4 billion gallons of water in 2019, almost all of which was extracted from public water sources. Local communities rely on groundwater as a water resource. Yet, many bottled water companies, permitted by local governments, extract water from these sources and bottle the water to sell for profit outside of the state. Companies that utilize this production process pay

a small application fee to extract large quantities of water from public sources and then profit billions of dollars without any further or significant consideration or financial compensation to the community. These bottled water production practices furthermore raise environmental degradation and environmental justice concerns. The extraction of water from these resources at such high rates makes the aquifer's ability to recharge more difficult, leaving less water to serve the community and damaging wildlife habitats. While not all bottled water companies engage in the practice of extracting water directly from groundwater sources, with the majority opting instead to purchase water from municipal supplies, the lack of regulation allows bottled water companies to benefit from a loophole. Despite community pushback, companies like Nestlé continue to obtain approval for permits to increase their rates of water extraction.

Nestlé Waters, one of the largest bottled water companies globally, is among the most unethical in the industry. Because of the current regulations on water extraction, for small application fees, Nestlé has managed to obtain permits to extract over a million gallons of water daily from groundwater and surface water sources in several states, including Florida, California, and Michigan, where nearby communities are struggling with water use, access, and quality. Bottled water companies take from public water sources and bottle the water for profit gained elsewhere, even when local communities have a greater need for the water. These companies ship the bottles out of state for sale without financially compensating the local community or reinvesting in it.

There have been recent efforts to change how the bottled water industry operates. Several lawsuits have been brought against bottled water companies in an effort to challenge their rights to water extraction permits. Early in 2020, the Washington State Senate attempted to pass a first

in the nation bill to ban bottled water companies from tapping groundwater sources,[297] and shortly after, United States House of Representatives Democrats opened an investigation into industry practices, particularly scrutinizing Nestlé.[298] Despite these efforts, bottled water companies have continued to legally extract massive amounts of water because the current legislation and regulatory schemes allow them to do so.

There is a fundamental problem with how the bottled water industry practices are regulated and permitted. The Food and Drug Administration (FDA) regulates bottled water as a packaged good under the Food, Drug, and Cosmetic Act and regulates the quality of the water to align with the Safe Drinking Water Act (SDWA), which authorizes the Environmental Protection Agency (EPA) to establish health-based standards regarding the presence of contaminants in drinking water. The EPA protects source water only to the extent that the quality and quantity of the water is maintained via the selecting of the best available drinking water source, protecting the water source from contamination, using effective water treatments, and preventing water quality deterioration in the water distribution system.[299] Beyond federal regulations, extractions from groundwater and surface water sources are currently regulated via a permitting system that allows companies to extract massive amounts of water from public resources for small application fees and bottle the water to sell for profit outside of the region. The current federal regulations for bottled water production do not directly apply to water extractions nor the amount of water extracted, and the current permitting system regulating water extractions does not take the local and ecological communities into consideration. The state and federal governments

[297] Brown, Alex, 2020, "Washington State Bottled Water Bill Fails, But Congress Scrutinizes Industry," *The Pew Charitable Trusts*.
[298] Ellison, Garret, 2020, "U.S. House Democrats Launch Probe into Nestlé Water Bottling," *Mlive*.
[299] 42 U.S.C. §300f et seq. (1974)

should pass new legislation that more accurately accounts for the impacts of water extraction on the environment and local communities and holds bottled water companies accountable.

History:

Americans have been drinking bottled water since before the ratification of the Constitution, with records of the sale of bottled water in Boston dating back as early as 1767. The bottled water industry expanded enormously throughout the nineteenth century when new glass technology made the mass production of bottled water more practical.[300] Consumers believed that bottled water had health benefits and desired the image and status associated with the product. Bottled water briefly went out of style in the early twentieth century when the United States started using chlorine to treat municipal drinking water, but came back in the 1970s, when Perrier launched a marketing campaign for its imported water; Americans again began to see bottled water as a source of health and image.[301] In the decades since, the bottled water industry has grown to be the largest beverage category by volume, topping carbonated soft drinks for the first time in 2018 with 13.8 billion gallons.[302] Bottled water's recent success can be attributed to consumers' desires to avoid artificial sweeteners and have a low calorie drink, as well as its portability and affordability.

Nestlé Water has become a dominant force in the bottled water industry. Almost two centuries ago, Henri Nestlé opened his first lemonade and water bottling factor, and today, Nestlé Waters is the largest bottled water company in the world with over fifty brands spanning

[300] Great Lakes Law, 2009, "A Brief History of Bottled Water in America," *Great Lakes Law*.
[301] Hall, Noah D., 2009, "Protecting Freshwater Resources in the Era of Global Water Markets: Lessons Learned from Bottled Water" *University of Denver Water Law Review*.
[302] Beverage Marketing Corporation, 2019, "Press Release: Bottled Water, the Largest Beverage in the U.S., Continues to Grow," *Beverage Marketing Corporation*.

five continents, eleven of which are sold under Nestlé Waters North America.[303] Nestlé sells close to $8 billion in bottled water worldwide, with more than half of the revenue coming from its North American operations.[304] While several other bottled water companies in the United States purchase municipal water for bottling purposes, Nestlé acquires the majority of its water by extracting water directly from the source.

Current Regulations:

Federal Regulations

The federal government, with few exceptions, does not regulate water withdrawals and water use from groundwater or surface waters for the purpose of bottling. At the federal level, bottled water production is regulated almost exclusively by the Food and Drug Administration. Under the Federal Food, Drug, and Cosmetic Act (FD&C Act), the FDA regulates the quality and safety of bottled drinking water, as well as the accuracy in labeling. According to the FDA, "spring water" is derived from an "underground formation from which water flows naturally to the surface of the earth," and the water must be collected directly from the spring or through a bore hole tapping the underground formation feeding the spring.[305] Regulations included in the FD&C Act that specifically pertain to bottled water include, the "standard of identity," which defines the different types of water, the "standard of quality," which sets maximum levels of contaminants, and "current good manufacturing practices (CGMP)," which requires bottled

[303] Nestlé Waters, 2019 "All Brands: Bottled Water," *Nestlé Waters*.
[304] Winter, Caroline, 2017, "Nestlé Makes Billions Bottling Water It Pays Nearly Nothing For," *Bloomberg.com*.
[305] 21 C.F.R.. § 165.110 (revised 2019)

water to be safe and produced under sanitary conditions.[306] There are no regulations applying to the water extraction practices.

The Environmental Protection Agency, the federal agency generally responsible for setting standards for drinking water under the Safe Water Drinking Act (SDWA), does not regulate bottled water. The SWDA does not apply to bottled water, but the FDA does regulate the quality and safety of bottled water to align with the drinking water quality standards set by the EPA for other drinking water, including municipal tap water.[307] Still, there are no EPA regulations that directly apply to the extraction process used in production, despite the environmental impacts of water extraction from groundwater and surface water sources at such high rates as are required by the commercial demand for bottled water.

There are, however, a few other relevant acts, although none explicitly regulate water extraction for the purposes of bottling. The Wild and Scenic Rivers Act of 1968 holds that certain rivers "shall be preserved in free-flowing condition," forbidding any "department or agency of the United States [from] recommending authorization of any water resources project that would have a direct and adverse effect."[308] This act is limited in its ability to regulate because the law only applies to river segments designated as "wild and scenic rivers" and technically only applies to federal action, which would exclude private water withdrawals. The National Environmental Policy Act of 1969 has similar limitations in that its intentions to "promote environmentally sensitive decision-making without prescribing any substantive standards" only applies to federal actions.[309]

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[306] U.S. Food and Drug Administration, 2019, "Bottled Water Everywhere: Keeping It Safe," *U.S. Food and Drug Administration*.
[307] U.S. Food and Drug Administration, 2019.
[308] 16 U.S.C. §§1271-1287, as cited in Hall, Noah D., 2007, "Federal and State Laws Regarding Bottled Water - An Overview and Recommendations for Reform."
[309] Anderson v. Evans, 314 F.3d 1006, 1016 (9th Cir. 2002), as cited in Hall, 2007.

The most relevant and applicable act, the 1986 Water Resources Development Act, comes close to addressing bottled water withdrawals, but does not effectively do so. Section 1109 of the 1986 Water Resources Development Act provides that "no water shall be diverted or exported from any portion of the Great Lakes within the United States, or from any tributary within the United States of any of the Great Lakes, for use outside the Great Lakes basin" unless otherwise approved by the Governor of each of the Great Lake states, which includes Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, and New York.[310] This law does not solidly address water withdrawals with respect to bottled water because it is unclear whether the transportation of bottles of water out of the basin is included in the ban on "diversions," and the law lacks any kind of standards for the governors' collective approval. Furthermore, the 1986 Water Resources Development Act may not apply to groundwater, from which a large portion of bottled water is derived. The one lawsuit attempting to apply the Water Resources Development Act was dismissed on account that the law does not provide a private right of action to enforce compliance.[311] At the federal level, regulation relating to water extraction for the purpose of bottling is limited, unclear, and thus ineffective.

State Regulations

With the regulation of bottled water production practices at the federal level ineffective and incohesive, much of the burden is left to the states. The Natural Resources Defense Council estimates that between 60% and 70% of the bottled water sold in the United States does not fall

[310] 42 U.S.C. § 1962d-20(d) (2000), as cited in Hall, 2007.
[311] Little Traverse Bay Bands of Odawa Indians v. Great Spring Waters of Am., Inc., 203 F.Supp.2d 853 (W.D. Mich. 2002), as cited in Hall, 2007.

into a category that allows it to be federally regulated.[312] States utilize a combination of common law rules and regulatory schemes to govern groundwater withdrawals. Several states have adopted a form of correlative rights for competing groundwater use, ensuring that property owners have a right to use the groundwater below their property subject to interference by neighbors' rights and reasonable use.[313] Fewer states, including Texas, for example, abide by a rule of capture, where a landowner may pump as much groundwater as they choose, without liability to neighbors.[314]

A more prominent regulatory scheme that applies to the bottled water industry is a permitting system in which state governments are responsible for issuing consumptive use permits for the extraction of water from natural resources within their state boundaries.[315] Permits are granted after an evaluation of the impacts of granting such a permit, but generally do not accurately account for the environmental impacts of extremely high rates of extraction, nor do permit evaluations accurately account for the financial component. An extraction permit, in most cases, can be obtained for a relatively small one-time application fee, in some cases as low as $115,[316] and in other cases, permits require a yearly fee to maintain. In either situation, despite the intention to extract water to bottle for profit in states other than the state from which the water was obtained, there is no financial compensation to the local government and community. Granting companies permission to extract massive amounts of water from groundwater and surface water sources incidentally makes the resources more vulnerable, and this system allows

[312] Boldt-Van Rooy, Tara 2003, "'Bottling Up' Our Natural Resources: The Fight Over Bottled Water Extraction in the United States," *Journal of Land Use & Environmental Law*.
[313] Hall, Noah D., 2009, "Protecting Freshwater Resources in the Era of Global Water Markets: Lessons Learned from Bottled Water," *University of Denver Water Law Review*.
[314] Hall, 2007.
[315] Boldt-Van Rooy, 2003.
[316] Moody, Haley, 2020, "Fla. Gets a Tiny Paycheck as Nestlé Taps Its Springs," *Florida Springs Institute*.

bottled water companies to extract millions of gallons of water from a public source for virtually no cost, leaving taxpayers to bear the burden of a dwindling water resource and the financial burden of the environmental damage.

The Problem:

Environmental Impacts

Extracting groundwater for human use, or the water use cycle, interferes with the natural water cycle, negatively impacting the water resource. Significant groundwater pumping leaves less water at the point of withdrawal to support other functions and can lead to a temporary or permanent lowering of the water table.[317] The effects are greater when the rates at which the water is withdrawn are higher than the rates at which the groundwater is replaced through recharge, when the water percolates through the soil from the surface water, meaning greater environmental impacts and water shortages.[318] The environment depends on groundwater, and a decrease in the water available leads to less water to support the local ecological community. The environment and habitats, including wetlands, terrestrial habitats, and fisheries, may change as there is no longer enough water,[319] which could have rippling effects for the inhabitants and for people.

Groundwater is often hydrologically connected to fresh surface waters such as rivers, streams, and lakes, so increases in water extraction decreases the amount of groundwater that would otherwise flow naturally into those bodies of water. Flowing groundwater is essential to

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[317] Hall, 2007.
[318] "Environmental Impacts of Water Withdrawals and Discharges in Six Great Lakes Communities: A Role for Green Infrastructure," 2016, J. W. Ridgway, R. Higuchi, L. Hoffman, and R. Pettit, *Environmental Consulting & Technology Inc*. Report.
[319] "Environmental Impacts of Water Withdrawals and Discharges in Six Great Lakes Communities: A Role for Green Infrastructure," 2016.

providing stream base flow, but when groundwater is diverted away from the streams, perennial streams could become intermittent, and intermittent streams could become ephemeral, lasting only for a limited amount of time.[320] A decrease in surface water directly impacts the local and ecological communities that rely on the groundwater input to the surface water.

Nestlé Waters North America has attracted a lot of attention for its controversial extraction permits in several states in the United States, including Michigan, California, and Florida, where citizens, politicians, and environmentalists have noticed the effects of Nestlé's operations. Nestlé advertises that 100% of their bottled water is spring water,[321] indicating that Nestlé acquires all of its water for bottling directly from the groundwater sources, rather than purchasing municipal water.

In 2018, Nestlé Waters obtained a permit in Michigan to extract 576,000 gallons of water per day from the headwaters of two cold water trout streams in Osceola County under its Ice Mountain brand. Michigan Citizens for Water Conservation and the Grand Traverse Band of Ottawa and Chippewa Indians challenged the permit in court, indicating that the computer modeled data that Nestlé provided in applying for the permit did not accurately account for environmental harm and showing estimates for reductions in stream flow and fish populations that were more accurately based on actual field measurements.[322] Additionally, a report commissioned by the Michigan legislature concluded that "most aquatic ecosystems in Michigan are dependent upon the discharge of groundwater into surface water," with about 80% of the annual streamflow in Michigan's lower peninsula resulting from groundwater discharge. Most

[320] "Environmental Impacts of Water Withdrawals and Discharges in Six Great Lakes Communities: A Role for Green Infrastructure," 2016.
[321] Nestlé Water, 2019.
[322] Ellison, Garret, 2020, "Nestlé Wins Legal Challenge to Michigan Groundwater Extraction," *Mlive*.

lakes and wetlands exclusively rely on groundwater and rain as sources of inflow.[323] Despite the potential for Nestlé's water extractions to negatively impact the local ecology, Judge Pulter upheld the permit in April of 2020, finding the extractions "reasonable under common law principles of water law in Michigan."[324]

Springs in Florida have similarly suffered at the hands of Nestlé's excessive water extractions. Florida has the largest concentration of freshwater springs in the world, but the springs have been drying up, threatened by increasing pollution and decreases in water flow, much of which is attributed to over extraction. The continued issuing of extraction permits by the state and local governments has prevented the Floridan aquifer from recharging. The aquifer serves as the primary source of drinking water in the state of Florida, making its sustainability imperative for Florida residents. In August 2019, the Florida Springs Institute reported that groundwater extractions need to be reduced by 50% or more in North Florida to restore average spring flows to 95% of previous levels. From 1950 to 2010, the average spring flows declined by 32% as groundwater use increased by 400%. An environmental scientist and the executive director of the Florida Springs Institute, Robert Knight, noted, "The aquifer levels are coming down about an inch per year on average. Every year the aquifer level drops, there is less pressure and flow at the springs."[325]

In California, where citizens are frequently plagued by drought, Nestlé has pumped 62.6 million gallons of water from the San Bernardino spring on average each year from 1947 to 2015, mostly under its Arrowhead bottled water brand. A period of drought in 2015 sparked allegations against Nestlé for not having full rights to the water being sold and complaints that

[323] Hall, 2007.
[324] Ellison, 2020.
[325] Sainato, Michael, and Chelsea Skojec, 2019, "Bottled Water Is Sucking Florida Dry," *The New York Times*.

the company's actions were harmful to the natural environment and its inhabitants. The California State Water Board subsequently opened an investigation and found that Nestlé did, in fact, lack legal permits for much of the water it had extracted because the permit was issued to the Arrowhead Puritas Waters Inc. in 1988; Nestlé acquired Arrowhead Puritas in 1992, but a permit was never issued under the Nestlé name.[326] The Water Board's findings show that the permit Nestlé allegedly held had not been under review in over twenty five years, during which the local ecology suffered the consequences. Following the investigation, the United States Forest Service, who regulates the San Bernardino spring, offered Nestlé a three-year permit to continue extracting millions of gallons of water from the San Bernardino National Forest. The offer allows the bottled water giant to continue drawing water from the Strawberry Creek watershed, which is currently rated as "impaired" due to its recent depletion. Opponents claim that Nestlé's operations have contributed to that depletion since the Strawberry Creek is spring-fed, and the depletion of the waterway has adverse effects on the wildlife it supports.[327] New federal land management plans, however, do not require that the springs be restored to natural, free-flowing levels, only to "functioning at risk,"[328] which is still less than ideal.

The recurrent drought in California adds to Nestlé's opposition. In times of drought, the decrease in water availability impacts the public water supply and forces competition with the ecology dependent upon the groundwater, and a deficient amount of groundwater, exacerbated by high rates of withdrawal, leads to increased sensitivity to climate change.[329] Ileene Anderson,

[326] Neuman, Scott, 2019, "Nestlé Offered Permit to Continue Taking Water from California Watershed," *NPR*.
[327] Neuman, 2019.
[328] Wilson, Janet., 2019, "Nestlé Is Still Taking National Forest Water for Its Arrowhead Label, with Feds' Help," *The Desert Sun*.
[329] "Environmental Impacts of Water Withdrawals and Discharges in Six Great Lakes Communities: A Role for Green Infrastructure," 2016.

the senior scientist with Center for Biological Diversity spoke about the continued extraction of water in San Bernardino National Forest amid a drought and said, "All the climate change modeling that has been done suggests Southern California mountains are going to get drier and hotter."[330]

The current permitting system, allowing bottled water companies to extract exorbitant and harmful amounts of water directly from groundwater sources, is not sustainable. The continuous and dangerously high rates of withdrawal lead to long term surface water depletion and habitat damage. The International Bottled Water Association issued a statement in 2020 saying that "because a long-term sustainable supply of high quality water is literally the foundation and 'lifeblood' of bottled water companies, the bottled water industry recognizes the critical importance of environmental conservation and stewardship of water resources,"[331] but bottled water companies continue to damage the water sources.

Putting Bottled Water Before the Needs of Local Communities

In addition to negatively impacting the environment, the current regulations on bottled water production lacks consideration for the community. In most cases, bottled water companies extract groundwater directly from a resource that supplies a public drinking water source. Nestlé's water bottling operations have been scrutinized for the company's profiting from the rebranding of a public resource while nearby communities struggle with water use, access, and quality. This problem, like environmental harm, occurs in several states in the United States, including Florida, Michigan, and California.

[330] Sainato and Skojec, 2019.
[331] Brown, 2020.

Nestlé's water extractions deplete water resources on which communities depend for drinking water, and the company does not adequately compensate the affected communities. In Florida, for example, Nestlé's withdrawal permits have cost the company a one-time application fee, but the company has profited millions from bottling that water. Nestlé's ten-year permit to extract 395,000 gallons a day from Cypress Springs cost the company a total of $500, and their permit to extract 1.15 million gallons of water per day from Ginnie Springs cost even less, with a one-time fee of $115.[332] The permitting system has such low costs in comparison to the benefits that the system seems to support harmful and excessive groundwater withdrawals. Michael Roth, president of the environmental non-profit, Our Santa Fe River, who has been working to fight Nestlé in Florida, said, "they're taking our water away, and we get no benefit."[333] Florida residents do not benefit from Nestlé's selling of their water, and conversely, Florida taxpayers spend millions of dollars annually on aquifer recharge programs. The state should prioritize ensuring safe and accessible drinking water for its residents rather than issuing permits so that big corporations can resell their water elsewhere.

In 2015, Nestlé sold over $7.7 billion worth of bottled water worldwide, with over $343 million of the revenue coming from Michigan, where Nestlé bottles its Ice Mountain and Pure Life brands.[334] The company pumps 1,100 gallons per minute across several sources in Michigan, but state residents pay more in water bills each year than many of the one-time application fees.[335] Nestlé's 2018 extraction permit in Osceola County, Michigan allows for almost 600,000 gallons of water to be withdrawn each day for a mere $200 annual paperwork fee

[332] Moody, Haley, 2020.
[333] Sainato and Skojec, 2019.
[334] Winter, 2017.
[335] Perkins, Tom, 2019, "The Fight to Stop Nestlé from Taking America's Water to Sell in Plastic Bottles." *The Guardian*.

per facility, but nearby Michigan citizens struggle with access to clean water. Low-income Detroit residents who are unable to pay their water bills are faced with water shut offs, and Flint residents have struggled with access to clean water since the beginning of the city's water crisis in 2014. The crisis began after the city attempted to cut costs by switching the city's drinking water supply to the Flint River, an unofficial disposal site for local industry. Flint was once a prominent and flourishing home to the auto industry, but rising oil prices brought the prosperity to an end, leaving the city's population dwindling, with the majority of citizens impoverished. The city's $25 million deficit led to the poor decision to switch the water supply to the corrosive Flint River, which combined with the failure to properly treat the water, quickly caused lead to leach out of aging pipes into the water.[336] Michigan's residents are struggling with water quality and access, with thousands of citizens suffering from health problems related to poor access to clean water, showing that potable water is a precious and limited resource. While a lack of adequate funds leaves Michigan's citizens struggling to attain a steady supply of clean water, Nestlé is profiting hundreds of millions of dollars annually from the sale of bottled water sourced from Michigan alone.

United States House Democrats launched an investigation into the bottled water industry practices in early March 2020. U.S. Representatives, Harley Rouda (CA) and Rashida Tlaib (MI), the chair and vice chair of the House Oversight and Reform Environment Subcommittee, requested information from Nestlé dating back to 2014, including U.S. groundwater extraction reports, sales revenues, advertising expenses, plastic use, and quality testing. In the five-page letter sent to Nestlé, the representatives expressed concerns about the company's practices, specifically how Nestlé profits from a public resource.[337]

[336] Denchak, Melissa, 2020, "Flint Water Crisis: Everything You Need to Know," *NRDC*.
[337] Ellison, 2020.

The letter included a note about Michigan residents, saying, "When Flint, Michigan was in the midst of a lead contamination crisis, Nestlé continued to extract spring water from Michigan communities like Evart for the purpose of selling the water outside of the state, though this town was located just two hours from Flint."[338] Nestlé's extractions from Michigan's springs similarly highlighted the disparity in access to water that challenges low-income Detroit citizens. A Michigan State University study predicts that more than a third of Americans will not be able to afford their water bills in five years, with an expected increase in costs as the current infrastructure breaks down,[339] suggesting that the water access problem will only worsen.

In California, Nestlé has faced criticism for extracting water for commercial purposes during periods of drought when California residents were asked to reduce their water use,[340] again showing that Nestlé will continue to take water even when the local community is struggling with water use, access, and quality. Tlaib and Rouda, in their investigation of situations like those in Florida, California, and Michigan, expressed concern that "Nestlé is taking a critical public resource from communities in need without equitably reinvesting in those communities and ensuring long-term sustainability."[341] The current regulations do not require that Nestlé reinvests in the community nor sustainability efforts, and Tlaib and Rouda are highlighting that problem with the current system and indicating that companies are not taking responsibility for the impacts of their production processes. Despite Nestlé's claims of putting "community first" and promoting "healthy hydration,"[342] the company has repeatedly shown no consideration for the community or the environment. The current permitting system that allows,

[338] Ellison, 2020
[339] Winter, 2017.
[340] Ellison, 2020.
[341] Brown, 2020.
[342] Ellison, 2020.

and almost encourages, Nestlé and other bottled water companies to take water when the community needs the water must be reevaluated to protect against real harm to the environment and people and to prioritize the local and ecological communities.

Recommendations:

Bottled water companies, most notably Nestlé, are legally extracting massive amounts of water daily from groundwater and surface water sources on which the local and ecological communities depend as a resource. Federal legislative bodies have largely deferred management of such resources to the state legislatures, and though water law regarding extractions may be more effectively regulated at the state and local levels, there are federal actions that could aid in managing the problem.

The FDA could edit the agency's classification of waters, which currently require any bottled water labeled "spring water" to contain water extracted directly from groundwater or surface water sources. The current requirements for bottled water to be considered "spring water" encourage companies that market their water as such, including Nestlé, to continue pumping water from those natural resources to sell for profit so they can continue to market their bottled water as entirely spring water. Expanding the classification of waters so that bottled water sourced from more water sources, rather than exclusively water extracted directly from groundwater and surface water sources, would allow companies selling "spring water" to continue marketing their product with that terminology, while more responsibly sourcing the water so as not to negatively impact the local and ecological communities.

Additional actions that could be taken at the federal level to resolve the problem include the federal government directing more funding into research, data collection, and investigation regarding groundwater resources. Increasing the funding and resources dedicated to the water extraction problem would highlight the importance of the issue, and the collected data could more accurately show the gravity of the situation. More research is needed, and more funding is necessary to conduct that research. The information would better inform water users and water managers, including the EPA, state officials, and local courts that decide on permits and otherwise depend on common law to inform their decisions. This research could help the permitting system and aid in the determination of appropriate fees and extracted amounts. At the federal level, the data could help the EPA, and the U.S. Forest Service when applicable, to set more stringent standards for the protection of freshwater resources, which would make access to the water sources more difficult for bottled water companies.

While the federal government's actions could contribute to resolving the problem, there is greater potential for state governments to pass legislation to more effectively manage the problem, since many of the systems that allow for this problem to persist occur at the state and local levels. There are existing efforts to reform the regulation of water extractions, but, unfortunately, none have proved successful or effective. The Great Lakes Compact, which includes eight states, Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin, bans new or increased diversions of water from the Great Lakes Basin with limited and strictly regulated exceptions.[343] The Compact was signed into law in 2008 and became effective in December of that year, and while the agreement was created with intentions to protect the Great Lakes Basin, a step in the right direction with respect to water extractions, the

[343] Indiana Department of Natural Resources, "Great Lakes Compact," *Indiana Department of Natural Resources*.

Compact is not as effective as one would hope. The Great Lakes Compact has two loopholes that allow companies like Nestlé to continue extracting massive amounts of water from the Great Lakes Basin and diverting the water outside of the region: the standards are not retroactive and are only intended to apply to new or increased water withdrawal applications, and a clause in the Compact exempts water shipped in containers under 5.7 gallons without specifying total volume withdrawn or the number of containers.[344]

A seemingly more obvious and effective use of legislation to resolve the problem would be for states to pass a bill to ban bottled water companies from tapping groundwater sources. Earlier this year, a bill of that nature passed through the Washington State Senate and came before the House Committee on Rural Development, Agriculture, and Natural Resources but was never brought up for a vote. The bill was introduced after Crystal Geyser, another bottled water company advertising "pure spring water," attempted to build a bottling plant in Randle, a small rural community near Mt. Rainier. Randle residents, environmentalists, rural activists, and tribal leaders testified in favor of the bill, expressing that such legal action would protect watersheds and fisheries, but groups such as the Washington Beverage Association, the International Bottled Water Association (IBWA), and the Building Industry Association of Washington testified that the ban would create a "slippery slope" that would allow lawmakers to use water rights to ban industries they didn't favor.[345] The objections raised an interesting argument that likely led to the bill's effective death before the House Committee on Rural Development, Agriculture, and Natural Resources. While the Washington bill is specific to the situation in Washington, the attempt to pass the bill is an indicator of how effective such legal action would be in regulating

[344] Barrows, Mitch. 2017, "A Great Lakes Water War: Nestlé, the Great Lakes Compact, and the Future of Freshwater," *Freshwater Future*.
[345] Brown, 2020.

the production of bottled water when the proposed bill significantly impacts and directly contradicts the interests of the industry. A bill of this nature is political and controversial and would likely be subject heavy interference from lobbyists.

Banning bottled water companies from tapping groundwater sources would solve many of the problems caused by companies over extracting from our natural resources, but as the industry associations expressed, there can be enormous economic consequences. In addition to setting a precedent for future industry related legislation, banning bottled water companies from tapping resources could have extreme financial consequences, especially for companies who rely on the ability to tap these resources for 100% of their water supply, including Nestlé. Ideally, states should work towards the elimination of permits issued to bottled water companies for extracting massive amounts of water from public resources so as to completely eliminate the potential of harm, perhaps gradually reaching that point by not issuing further permits or by reducing the amounts allowed to be extracted by current permits. Eliminating consumptive use permits issued to bottled water companies would eliminate the problem, which is the long-term goal, but the move would mean radical change for the industry and economic consequences, so the ability to gradually reach that point would be extremely important to the success of this type of legislation. If the FDA were to change the definition of "spring water" to allow for more flexibility in how bottled water companies obtained the water in conjunction with the cessation of permit issuing, then the effects of the elimination of extraction permits would not be as drastic, but with the current FDA requirements, the continued issuing of water bottling extraction permits by the state and local governments has allowed the problem to persist.

One of the biggest issues with the current system for regulating water extractions is the lack of financial compensation for resource protection and to the communities. With bottled

water companies obtaining permits to extract hundreds of thousands of gallons of water each day for low one-time applications fees of a couple hundred dollars, the companies are not being held financially responsible for the effects of their actions. The application fees are not enough to fund resource protection and management or research that could benefit the local communities, including sustainability efforts and proper treatment, which is essential to the preservation of water resources and drinking water supplies for local communities. This problem can be addressed in a lesser remedy than the elimination of extraction permits and, currently, the most reasonable approach to reforming the current permitting system: including a per gallon water extraction excise tax system, similar to that of oil, gas, and minerals, with the funds being reinvested into government funded resource management projects that benefit the local and ecological communities while allowing bottled water companies to continue their current extraction practices.

A bill with a similar solution was recently proposed in Florida that outlines how an excise tax system could work in this situation. In December of 2019, Senate Bill 1112 was introduced into the Florida State Senate, which would call for a 12.5 cents per gallon tax on extracted water with revenues dedicated to the state's Wastewater Treatment & Stormwater Management Revolving Loan Trust Fund.[346] The proposed bill was the first of its kind in the United States, but the bill died in the Senate Commerce and Tourism Committee and was never passed. Similar to the Washington state attempt to ban bottled water companies from directly extracting water, the bill was strongly opposed by industry leaders and lawmakers who were concerned with the economic ramifications, including immediate layoffs and the possibility of Nestlé removing its Florida bottling operations altogether, eliminating hundreds of jobs. Because of the significant

[346] Haughey, John, 2020, "Florida's Proposed First-in-Nation Water Excise Tax Bottled up by Legal, Procedural Questions," *The Center Square*.

economic effects of passing legislation that would force companies to reevaluate their business model, bills of this nature, including the proposed Washington and Florida bills, have fallen victim to excessive lobbying; Nestlé spends millions annually on lobbying and campaign donations to ensure the protection of the company's interests in lawmaking, and the corruption is a big reason why effective reform fails.[347] Although the Florida bill was not successfully passed, the bill is an excellent example of public policy, creating a tax system that effectively addresses several of the problems with the current regulating system.

The current system allows for a small one-time application fee for the consumption use permit to extract water at massive rates that harm the environment, leave taxpayers to bear the costs of maintaining the water resources, and do not compensate the local community. States should adopt a tax system, similar to the attempted excise tax bill put forth in Florida, that requires a per gallon fee for all water extracted by bottled water companies with the money being reinvested into the protection of the resources. When employing the excise tax system, there will inevitably be financial impacts on bottled water companies and economic consequences, but based on the current situation, legislators need to prioritize the long-term sustainability of water resources with the interests of the local and ecological communities at the forefront. This form of legislation is the most effective and reasonable approach to reforming the system for regulating the production of bottled water with respect to the extraction of water without having drastic financial impacts.

Conclusion:

[347] Perkins, 2019.

Bottled water has grown to be the largest beverage category by volume in the nation, with billions of bottles being consumed every year, but the production of bottled water has been costly for Americans. The bottled water industry is poorly regulated to allow companies, such as Nestlé, to extract massive amounts of water from groundwater and surface water sources to bottle for profit. This part of the production process has negatively impacted local and ecological communities that rely on these public water resources, and bottled water companies are not held responsible for the consequences of over extraction. While the elimination of extraction permits for bottled water companies may be the most sustainable solution in the long term, building a tax system into the existing permitting system, which allows companies to continue extracting water from the public resources but requires an excise tax to reinvest in water resource protection, is the most reasonable and feasible solution at this time.

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