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Cultural Norms as a Source of Law: The Example of Bottled Water

Christine A. Klein[*] *& Ling-Yee Huang*[**]

As a metaphor for the interaction of law and culture, a crystal-clear bottle of water is striking in its simplicity and purity. Bottled water has spawned a rich subculture of beverage drinkers, united by the truths and myths of bottled water that they embrace. More recently, an equally fertile subculture of bottled water protest has begun to coalesce. Notably, the cultural norms evidenced by supporters and detractors go far beyond mere hydration, touching upon such far-flung notions as health, taste, convenience, status, morality, anti-privatization, sustainability, and truth-telling. In contrast, the legal narrative is surprisingly sparse, overlooking an important opportunity to engage in a cultural-legal dialogue on the evolving norms of water use. This Article argues that the states' law of water allocation is uniquely suited to stimulate this unrealized dialectic and to translate social values into law, having evolved over more than one century from the customs of water users. In particular, the Article identifies four discrete principles of water law that are particularly relevant to the discourse, including reasonable use, beneficial use, preferred uses, and the public interest. (Word count, including footnotes: 17,585).

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INTRODUCTION

Fortune Magazine predicted in 2000 that "[w]ater promises to be to the 21st century what oil was to the 20th century: the precious commodity that determines the wealth of nations."[1] Taking advantage of water's increasing value, the bottled water industry enjoyed a meteoric rise in the early years of the twenty-first century, as bottled water consumption worldwide doubled between 1994 and 2004.[2] By 2007, consumers were willing to pay three times as much for bottled water as for an equivalent amount of gasoline.[3] As bottled water increased in popularity, it spawned a surprisingly rich subculture of beverage drinkers, almost tribal in their allegiance to bottle water rather than ordinary tap water.[4] But just a few years later, an equally fertile subculture of protest began to emerge, attracting the support of groups ranging from environmentalists to consumer advocates, and from religious leaders to television celebrities.[5]

The modern phenomenon of bottled water has important legal ramifications. As a metaphor for the critical interaction of law and culture, the water bottle is striking in its simplicity and purity. The bottled water movement draws from, and contributes to, social norms advancing health, purity, taste, and convenience.[6] In juxtaposition, the bottled water backlash contains the raw material of evolving cultural norms that promote anti-privatization, sustainability, and truth-telling.[7] These two powerful and antithetical value systems are

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[1] Shawn Tully, *Water Water Everywhere*, Fortune, May 15, 2000, at 342, 344.

[2] James Owen, *Bottled Water Isn't Healthier Than Tap, Report Reveals,* NATIONAL GEOGRAPHIC NEWS, Feb. 24, 2006, *available at* http://news.nationalgeographic.com/news/pf/16306346.html (citing Earth Policy Institute study). In 1997, the bottled water industry occupied just two percent of the "major beverage" market. Jennifer Gitlitz & Pat Franklin, *Water Water Everywhere: The Growth of Non-Carbonated Beverages in the United States,* CONTAINER RECYCLING INSTITUTE (2007) (including as "major beverages" soda, wine and liquor, beer, and flavored non-carbonated drinks, but excluding dairy products).

[3] Marc Gunther, *Bottled Water: No Longer Cool?* CNNMoney.com, Apr. 25, 2007, *available at http://money.cnn.com/2007/04/24/news/economy/pluggedin_gunther_water.fortune/index.htm See also* Noel C. Paul, *Water & Gas: An American Pricing Paradox,* CHRISTIAN SCIENCE MONITOR, Aug. 5, 2002 (reporting the price of *Poland Spring* bottled water at $1.61 per gallon, compared to the price of unleaded gasoline at $1.39 per gallon); Emily Arnold & Janet Larsen, *Bottled Water: Pouring Resources Down the Drain,* EARTH POLICY INSTITUTE, Feb. 2, 2006 (reporting the price of bottled water at $10 per gallon), http://www.earth-policy.org/Updates/2006/Update51.htm (last visited Feb. 10, 2008).

[4] *See infra* Part II.

[5] *See infra* Part III.C.

[6] *See infra* Part II.A.

[7] *See infra* Part II.B.

struggling mightily to control an activity at once profound and profane—satiating human thirst.

We highlight the law's failure to participate in this robust cultural discourse, and we argue that the law has been negligent in its duty to enrich the dialogue. Although critics have begun to explore potential avenues for legal reform, few (if any) have focused upon the body of law most relevant to the regulation of bottled water: state water allocation law. These laws—rooted in custom and refined over the course of more than one century—are uniquely suited to the task of translating cultural values into law. Despite this promise, for the most part the specific issues posed by water bottling have been ignored by state water law. In some instances, bottled water has even enjoyed an explicit exemption from regulation. We hope to inspire state lawmakers to remedy these deficiencies. In particular, we identify four water law concepts that provide particularly fertile ground for the shaping of cultural water norms related to bottled water: reasonable use, beneficial use, preferred uses, and the public interest.[8]

Part I provides a general overview of the hydro-geologic and legal dimensions of bottled water. Part II makes the case against bottled water, asserting that its purported superiority over tap water in terms of health, taste, and convenience is more myth than reality. In Part III, we explore the relationship of law and culture, focusing upon the developing cultural movement that opposes the consumption of bottled water. The debate goes far beyond simple thirst-quenching, implicating a range of core cultural values. Offering prescriptive recommendations, Part IV examines the overlooked constitutive force of law in codifying appropriate cultural norms for the regulation of bottled water.

I. THE BASICS OF BOTTLED WATER

A. Sources

As defined by the federal Food and Drug Administration, bottled water is a food product consisting of water "that is sealed in bottles or other containers with no added ingredients except that it may optionally contain safe and suitable antimicrobial agents [and fluoride]."[9] Bottled water commonly refers to at least five types of water: purified water, sparkling water, spring water, artesian water, and mineral water. The latter three categories must come from underground water sources, whereas the first two types may be derived from either groundwater or surface waters such as rivers and lakes.

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[8] *See infra* Part IV.B.

[9] 21 C.F.R. § 165.110(a)(1) (2006).

Surprisingly, up to forty percent of bottled water is little more than tap water.[10] Because public water sources purify nearly all water prior to delivery into the municipal water supply, no additional purification may be necessary.[11] When the tap water is also treated by distillation, deionization, reverse osmosis, or other accepted treatments, it may be labeled as "purified water."[12] Well-known brands of purified water include *Aquafina* (a Pepsi product) and *Dasani* (a Coke product)—the top two sellers in the United States among all categories of bottled water.[13] As one source reports, "Aquafina is municipal water from spots like Wichita, Kansas. . . . Coke's Dasani (with minerals added) is taken from the taps of Queens, New York, Jacksonville, Florida, and elsewhere."[14]

A second category of bottled water, sparkling water, may come from either surface or underground sources. Sold under brands such as *San Pellegrino* and *Perrier*, it consists of treated water with added carbonation, typically injected by artificially charging the water with carbon dioxide as a dissolved gas. After treatment, the water must "contain[] the same amount of carbon dioxide from the source that it had at emergence from the source."[15]

Three additional categories of water—artesian water, spring water, and mineral water—all come from underground sources, often extracted from wells. In some cases, groundwater aquifers are "confined" by overlying geologic barriers of rock, clay, or shale.[16] If the confined aquifer is under sufficient pressure to force the groundwater at least up to the surface of the water table, then

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[10] Natural Resources Defense Council, *Bottled Water: Pure Drink or Pure Hype?,* Apr. 29, 1999, *available at* http://www.nrdc.org/water/drinking/nbw.asp. These estimates are similar to those reported by the Drinking Water Research Foundation's study of 149 bottled water sources. Keith N. Eshleman, *Bottled Water Production in the United States: How Much Groundwater is Actually Being Used? Study Summary* (May 2005), *available at* http://www.dwrf.info/publications.htm. *See also* Katy Byron, *Pepsi Says Aquafina is Tap Water*, CNNMoney.com , July 27, 2007.

[11] The FDA now requires such water to be labeled as "from a community water system" or "from a municipal source." 21 C.F.R. § 165.110(a)(3)(ii) (2006).

[12] Alternatively, purified water may be named by its treatment process, such as "deionized water" or "reverse osmosis water." *Id.* at § 165.110(a)(2)(iv).

[13] Brian Howard, *Is America's $8 Billion Bottled Water Industry a Fraud: Despite the Hype, Bottled Water is Neither Cleaner nor Greener than Tap,* E/THE MAGAZINE, http://www.organicconsumers.org/foodsafety/water121003.cfm.

[14] *Id.* (citing U.S. News & World Report magazine).

[15] 21 C.F.R. § 165.110(a)(2)(v) (2006).

[16] THOMAS V. CECH, PRINCIPLES OF WATER RESOURCES: HISTORY, DEVELOPMENT, MANAGEMENT, AND POLICY 96 (2003).

it may be marketed as "artesian" water[17] under brand names such as *Fiji Water.* This artesian water is typically extracted from the aquifer through a well, which may include a pump to increase the natural pressure.[18] Alternatively if the confined aquifer is under enough natural pressure to force water out of the ground, then the water may be marketed as "spring water,"[19] including such popular companies as *Saratoga Spring Water Company*, *Poland Spring*, and *Zephyrhills.* Finally, groundwater containing at least 250 parts per million total dissolved solids (minerals and trace elements) qualifies as "mineral" water.[20] Popular brands of mineral water include *San Pellegrino* and *Evian.*

B. Regulation

Although both bottled water and tap water are destined for human consumption, they are regulated by two different federal agencies. Tap water is regulated by the Environmental Protection Agency (EPA), whereas bottled water is regulated as a food product by the Food and Drug Administration (FDA). Although both sources are safe in the overwhelming majority of cases, tap water is more strictly regulated with respect to at least eight contaminants: *E. coli, giardia lamblia, legionella,* bacteria, viruses, acrylamide, asbestos, and epichlorophydrin.[21] Conversely, bottled water is regulated more strictly with respect to the presence of copper, and lead.[22]

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[17] 21 C.F.R. § 165.110(a)(2)(i) (2006) (requiring that the artesian aquifer water level "stands at some height above the top of the aquifer").

[18] *Id.*

[19] CECH, *supra* note 16, at 96. *See also* 21 C.F.R. § 165.110(a)(vi) (2006) (requiring that spring water "shall be collected only at the spring or through a bore hole [well] tapping into the underground formation feeding the spring").

[20] 21 C.F.R. § 165110(a)(iii) (2006) (providing that mineral water can be "tapped at one or more bore holes or springs, originating from a geologically and physically protected underground water source").

[21] Natural Resources Defense Council, *supra* note 4. *E. coli*, which comes from human and animal fecal waste, is not allowed in tap water, but is permitted in limited amounts in one out of ten bottles of water. *Giardia lamblia,* which may cause diarrhea, vomiting, and cramps, faces 99% removal or inactivation from tap water, but is not subject to any standard for bottled water. *Legionella* (which may cause a type of pneumonia), viruses, acrylamide, and epichlorophydrin (which may increase cancer risk) must be treated in tap water, but not in bottled water. Bacteria is limited in tap water to 500 bacterial colonies per milliliter, but subject to no standard in bottled water. Asbestos is limited to 7 MFL in tap water, but subject to no standard in bottled water. *Id.*

[22] Bottled water must contain no more than one thousand parts per billion copper, whereas tap water is treated against copper in a less stringent fashion. Bottled water must contain no more than 5 parts per billion lead, whereas tap water must be treated and contain no more than 15 parts per billion. Natural Resources Defense Council, *supra.*

Tap water is regulated by the EPA under the authority of the Safe Drinking Water Act of 1974 (SDWA).[23] Early American efforts to treat water relied on the use of chlorine, and such efforts corresponded with a decrease in typhoid cases and other water-borne bacterial diseases.[24] Concern about additional impurities such as organic contaminants motivated Congress to pass the SDWA, which delegated enforcement authority to the fledgling Environmental Protection Agency. More recently, Congress amended the SDWA in 1996 to include a more streamlined and flexible approach, accounting for the states' financial and technical ability to comply with federal standards.[25] The 1996 amendments also added provisions for the protection of underground aquifers that serve as sources of drinking water.[26] Overall, the SDWA applies to more than 160,000 publicly and privately operated water systems in the United States.[27]

Under the SDWA, the EPA regulates drinking water by publishing maximum contaminant level goals and by promulgating national primary drinking water standards.[28] The EPA may regulate a contaminant that, 1) may adversely affect health, 2) is known to be present or has a substantial likelihood of being present in public water systems with sufficient frequency and in sufficient quantity to constitute a threat to public health, or 3) if regulation would provide "a meaningful opportunity" to reduce risk to the public health, as determined by the discretion of the Administrator.[29] The SDWA requires the use of the best available, peer-reviewed science and requires consideration of the costs and benefits of regulation.[30] Through the Act, Congress prioritized the regulation of contaminants that pose the greatest threat to public health, emphasizing the

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[23] 42 U.S.C. § 300f *et seq. See generally,* Ellen L. Hall and Andrea M. Dietrich, *A Brief History of Drinking Water*, Rhode Island Water Resources Board, *available at* http://www.wrb.state.ri.us/program_eohistory.html.

[24] Hall & Dietrich, *supra.*

[25] H.R. Rep. 104-632(I) 1, 8-9 (104th Cong. 1996). *See also* Wendy P. Feiner, *Just When You Thought It Was Safe to Go Back in the Water: A Guide to Complying with the 1996 Amendments to the Safe Drinking Water Act*, 4 ENVTL. L. 193 (1997).

[26] 42 U.S.C. §§ 300h-300h-8.

[27] The SDWA does not apply to water systems that service twenty-five or fewer persons. U.S. Environmental Protection Agency, *Safe Drinking Water Act 30th Anniversary: Understanding the Safe Drinking Water Act*, http://www.epa.gov/safewater/sdwa/30th/factsheets/understand.html (last visited January 3, 2008).

[28] 42 U.S.C. § 300g-1(b)(1)(E).

[29] *Id.* at § 300g-1(a)(1)(A)(i-iii).

[30] *Id.* at § 300g-1(b)(3)(A), (C).

heightened threat to subgroups such as infants, children, the elderly, pregnant women, and those with a history of serious illness.[31]

In contrast to tap water, bottled water is regulated by the federal FDA under a statutory regime considerably less comprehensive than the tap water regulations set forth by the SDWA. In particular, the Federal Food, Drug, and Cosmetic Act orders the FDA, in consultation with the EPA Administrator, to either promulgate standards for bottled water or to publish reasons in the Federal Register for failing to promulgate such standards.[32] Although the FDA has opted to promulgate some standards, a 1999 Natural Resources Defense Council (NRDC) report found "gaping holes" in those rules. For example, if a company's bottled water does not meet the FDA standards, the company is merely required to label the bottled water as substandard, but is not prohibited from selling or distributing the product.[33]

The bottled water regulatory scheme has been criticized for its lack of rigorous monitoring requirements, particularly when compared to the monitoring of public water systems required by the EPA.[34] For example, tap water delivered to the City of San Francisco and the surrounding Bay Area is tested over 100,000 annually,[35] whereas bottled water may be tested as infrequently as one time per year.[36] The FDA's enforcement of bottled water standards is also weaker than the EPA's enforcement of tap water standards. The FDA enforces its bottled water standards through voluntary recalls[37] or through seizures of products found to be

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[31] *Id.* at § 300g-1(b)(1)(C).

[32] 21 U.S.C. § 349(a).

[33] 21 C.F.R. § 165.110(c).

[34] Natural Resources Defense Council, *supra* note 4.

[35] Jared Blumenfeld & Susan Leal, *The Real Cost of Bottled Water*, SAN FRANCISCO CHRONICLE, Feb. 18, 2007.

[36] *See supra* note ?? and accompanying text. Moreover, FDA regulations do not require water bottlers to notify the agency of violations, to test results, or to report the presence of contaminants. Natural Resources Defense Council, *supra* note 4.

[37] Because FDA regulations are limited to interstate commerce, in-state production and distribution of bottled water is monitored by states and by the bottled water industry itself. The International Bottled Water Association dominates as the primary industry trade group, and members of the IBWA account for nearly eighty percent of the sales of bottled water in the United States. Howard, *supra* note 13 (noting that many smaller bottling companies belong instead to the National Spring Water Association). Members of the IBWA are required to comply with the group's *Code of Practice,* which adopts in part the EPA's standards for public water supplies. *See* International Bottled Water Association, *Industry Regulations: The Bottled Water Code of Practice, available at* http://www.bottledwater.org/public/model_main.htm. The most significant limit of the *Code* is that unannounced, independent inspections are only required once per year, compared to weekly monitoring requirements imposed by the EPA. NSF International, *Bottled*

in violation of regulatory standards.[38] The statutory language for recalls emphasizes their voluntary nature, initiated and undertaken in good faith by companies to protect the public health and wellbeing.[39] Alternatively, the FDA may initiate the recall request, but this action is "reserved for urgent situations."[40] Seizure is an enforcement option of last resort, undertaken by the FDA only if the FDA determines that a recall is ineffective, that a recall would not be effective, or that a violation is ongoing.[41]

II. THE CASE AGAINST BOTTLED WATER: DEBUNKING THE MYTHS

A. Myth 1: Health and Purity

1. The Myth

According to a Gallup survey, health concerns are the primary reason that consumers purchase bottled water.[42] Drawing upon medical advice that a healthy diet should include consumption of eight glasses of water daily,[43] water bottlers highlight their product's nutritional value, absence of calories, and lack of salt.[44] As one bottling water representative asserted, "Consumers are making a choice of bottled water versus another beverage. Do I want a Coca-cola? Do I want a coffee? Or juice? Or is it happy hour? There's a time and place for bottled water, as there is for milk and juice and beer."[45] Advertising also seeks to equate brands

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Water Certification Program, http://www.nsf.org/consumer/bottled_water/program.asp?program=BottledWat. The IBWA contracts with NSF International, an independent certification organization that inspects for aesthetic and health-related contaminants. *Id.*

[38] 21 C.F.R. § 7.40.

[39] *Id.*

[40] *Id.* at § 7.40(c).

[41] *Id.*

[42] EPA Office of Groundwater and Drinking Water, *Analysis and Findings of the Gallup Organization's Drinking Water Customer Satisfaction Survey* 3, Aug. 6, 2003.

[43] The eight-glass-per-day requirement may be overstated. *See* Rachel C. Vreeman & Aaron E. Carrol, *Medical Myths*, 335 BRITISH MED. J. 1288 (2007).

[44] Aquafina, *Waterfact,* www.aquafina.com (follow links to "healthy habits").

[45] Gunther, *supra* note 3 (quoting Greg Koch, director of global water stewardship for Coca-Cola).

such as *Evian, Glaçeau,* and *Dasani* with health-promoting active lifestyles.[46] For example, *Evian*'s website portrays glowing, trim models seated in yoga poses.[47]

The bottled water culture also strives to project an image of purity, a concept closely linked with health. A sampling of bottled water labels reveals repeated usage of words such as *pure*, *pristine*, and *natural*. For example, *Fiji Water* traces its product to an artesian aquifer located in "the remote Yaqara Valley of Viti Levu, at the edge of a pristine rainforest," claiming that the wholly confined aquifer tapped by Fiji contributes to the product's purity and superiority.[48] Visual images reinforce these verbal references to purity. On bottle labels and websites, verdant images of mountains, lakes, glaciers, and springs are common. *Evian*'s website presents its "story," recounting the geologic history of its source aquifers in the Alps, and depicting sweeping panoramas of blindingly-white, snow-capped peaks.[49] Together, these words and images associate bottled water with purity, claiming an ancient geologic pedigree that predates human existence, stretching back to the fundamentally pristine state of raw nature.

2. *The Reality*

It is difficult to argue with the view that bottled water is a healthy alternative to sugary, calorie-loaded soft drinks. It is also true that adequate hydration can promote health in many ways, from reducing the risk of kidney stones[50] to helping with weight loss.[51] However, these observations are tangential to an important preliminary question: Is the bottle or the tap a better source of drinking water?

Contrary to the claims of water bottlers, the tap is often the healthier source of drinking water. In 1996, for example, the EPA reported that only ten percent of public water systems violated federal water treatment or contaminant standards.[52] In contrast, a 1999 test of bottled water found that approximately one-

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[46] *See* www.glaceau.com and www.dasani.com.

[47] *See The Evian Story,* www.evian.com (last visited Feb. 9, 2008).

[48] Fijiwater.com, *What is Artesian Water?*, http://www.fijiwater.com/Artesian.aspx (last visited January 3, 2008).

[49] *Id.*

[50] The Cleveland Clinic, *The Benefits of Water*, *available at* http://www.clevelandclinic.org/health/health-info/docs/2700/2731.asp?index=7250.

[51] Centers for Disease Control, *Obesity, available at* http://www.cdc.gov/nccdphp/dnpa/obesity/index.htm (noting that obesity in the United States increased from 15% of the population in 1980 to nearly 33% in 2006).

[52] Natural Resources Defense Council, *supra* note 4, at *Executive Summary*.

third of the samples exceeded at least one chemical or bacterial contaminant level set by industry standards.[53] Not only does bottled water contain more contaminants than tap water in at least some instances, but it may also lack substances important to the public health. For example, many public water systems add fluoride to the water, endorsed by the American Dental Association as a safe and effective measure to prevent tooth decay.[54] In contrast, much of the bottled water sold in the United States does not contain an optimal level of fluoride.[55] The use of fluoride is widely accepted in the dental community as a major factor in the reduction of tooth decay.[56]

The health myth is deeply rooted, as illustrated by the media splash surrounding the discovery of trace amounts of pharmaceuticals in drinking water. In March 2008, the Associated Press published an investigative report detailing the presence of drug residues in the drinking water of some twenty-four metropolitan areas of the United States.[57] The contaminants included anti-seizure medications, anti-inflammatory drugs, antibiotics, and a disinfectant found in antibacterial soap.[58] At first blush, much of the news coverage suggested that the problem was unique to tap water. For example, a Washington Post article entitled "Area Tap Water Has Traces of Medicine" asserted that most wastewater and drinking water treatment systems . . . are incapable of removing those drugs," but neglected to discuss the potential ramifications for bottled water.[59] Likewise, the Associated Press release confined its bottled water consideration to a brief reference buried in the middle of the report: "Even users of bottled water and home filtration systems don't necessarily avoid exposure. Bottlers, some of which

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[53] *Id.* (describing independently-contracted testing of 1,000 bottles of water representing 103 different brands, testing for approximately half of the contaminants regulated by the FDA). Among the more interesting bottled water contaminants are crickets, found in sparkling bottled water produced by Southwest Canners, Inc., based in Nacogdoches, Texas. The FDA issued a recall of this product in December 1994. PETER GLEICK, THE WORLD'S WATER: THE BIENNIAL REPORT ON FRESHWATER RESOURCES 53 (Island Press 2006).

[54] American Dental Association, *Bottled Water Home Water Treatment Systems, and Fluoride Exposure*, http://www.ada.org/public/topics/bottled_water.asp.

[55] The optimal level of fluoride is between 0.7 and 1.0 parts per million of fluoride. *Id.*

[56] Steven M. Adair et al., *Recommendations for Using Fluoride to Prevent and Control Dental Cavities in the United States*, 50 CENTER FOR DISEASE CONTROL MORBIDITY AND MORTALITY WEEKLY REPORT 1, Aug. 17, 2001.

[57] *See* Carol D. Leonnig, *Area Tap Water Has Traces of Medicines,* WASHINGTON POST, Mar. 10, 2008, at B01 (describing AP findings "revealed as part of the first federal research on pharmaceuticals in water supplies" and explaining that the "drugs we use for ourselves and animals are being flushed directly into wastewater, which then becomes a drinking water source downstream").

[58] *Id.*

[59] *Id.*

simply repackage tap water, do not typically treat or test for pharmaceuticals, according to the industry's main trade group."[60]

Just as the purported health benefits of bottled water are unsubstantiated, so also is its reputation for superior purity. In fact, in many cases bottled water comes from the identical sources tapped by municipal water systems.[61] The idyllic images of pristine forests, mountains, and springs on bottle labels suggests a naturalness that is belied by the actual source of the water. *Yosemite Waters* portrays glacial mountain peaks on its logo, but comes from a well beneath the Los Angeles freeway; *Everest Water's* website portrays a shimmering mountain lake, but originates as tap water from Corpus Christi, Texas, thousands of miles from its Himalayan namesake.[62] As a particularly graphic example of the mundane sources of bottled water, one journalist described a restaurant owner who "flushes his toilet with Oprah Winfrey's favourite bottled water."[63] The writer hastened to add, "[b]ut it's not as fancy as it sounds," explaining that both the trendy *1 Litre* bottling company and the down-to-earth greasy spoon restaurant draw their water from the same place—"two small wells located on 1.5 hectares off Highway 45 north of Baltimore, [Ontario, Canada]."[64]

B. Myth 2: Taste

1. The Myth

The International Bottled Water Association asserts that superior taste and consistent quality elevate bottled water above tap water.[65] Consumers agree, citing preferred taste as one of the principle reasons why they purchase bottled water.[66] But because the taste differentiation between bottled water and tap water is subtle, the industry promotes the status of its product as vigorously as its

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[60] Jeff Donn, Martha Mendoza, and Justin Pritchard, *AP Probe Finds Drugs in Drinking Water*, Mar. 10, 2008 (AP Online news report).

[61] *See supra* note 10 and accompanying text.

[62] Sam Howe Verhovek, *It's Wet. It's Bottled. It Sort of Tastes like Water.*, N.Y. TIMES, Aug. 10, 1997.

[63] Leah McLaren, *A Country Well Refreshes Celebrity Elite: Greasy Spoon's Secret Now Costs $11 a Litre and Draws Raves from Oprah,* Oct. 28, 2006, http://www.polarisinstitute.org (last visited Feb. 1, 2008).

[64] *Id.* (noting that *1 Litre* features a "sleek built-in-cup design" and sells for up to eleven dollars per litre at exclusive shops such as Louis Vuitton retail outlets in France).

[65] International Bottled Water Association *Frequently Asked Questions*, http://www.bottledwater.org/public/faqs.htm (last visited Feb. 9, 2008).

[66] EPA *Analysis and Findings, supra* note 42.

purportedly superior physical taste.[67] In this context, "taste" is a double-entendre, extending beyond the physical properties of the water itself, to the wealth, social status, and refined palates of those who choose it over ordinary tap water. As one consultant explained, "A Rolls-Royce is a status symbol, but you've got to have a barrel of money to have one. . . . A bottle of water, that's a relatively inexpensive status symbol.[68]

Bottled water brands with exotic names such as *Evian*, *Perrier*, and *San Pellegrino* may be intended to evoke images of smoke-filled Parisian cafes along the Seine, and precious waters appearing on the same white-clothed tables as bottles of fine wine. A University of Arkansas survey concluded that a statistically significant relationship exists between average household income and bottled water consumption, with twenty percent of households enjoying annual incomes over fifty thousand dollars purchasing bottled water on a daily basis.[69] The researchers found that age is also a relevant factor that influences the choice of bottled water over tap water.[70] These findings cumulatively suggest an association between consumption of bottled water and social status.[71]

Advertisers have become quite adept at imbuing bottled water with a luxurious allure. Consider the launch of *Bling H2O* by Hollywood writer and producer Kevin Boyd.[72] The corked and Swarovski crystal-encrusted frosted bottle is marketed as "the most exquisite, the most luxurious, lavish . . . [and] most expensive" water in the world.[73] Unable to market the exotic source of the water—which originates from a spring in Dandridge, Tennessee—*Bling H2O* celebrates the elite status attributed to its customers. At the retail store and showroom, a 750-milliliter bottle sells for forty dollars, almost half the price of

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[67] Verhovek, *supra* note 62.

[68] *Id.* (quoting Clive Chajet, chairman of Chajet Consultancy, a brand-identity consulting firm). In some instances, consumers are unable to distinguish bottled water from tap water in blind taste tests. *See infra* Part II.B.2.

[69] The survey was conducted as part of the Arkansas Poll, a statewide survey of Arkansas residents. University of Arkansas, *Press Release*, *Perception, Status and Bottled Water*, DAILY HEADLINES, Apr. 11, 2007, http://dailyheadlines.uark.edu/1617.htm (last visited Feb. 9, 2008).

[70] *Id.*

[71] *Id.*

[72] *See* http://www.blingh2o.com. *See also* www.finewaterimports.com (promoting "the world's finest bottled waters"); Tamsen Fadal, *N.Y. Bar Serves Bottled Water for $55*, http://www.wcbstv.com (July 14, 2007) (reporting on Via Genova, a fine-water bar in Chappaqua, New York that serves a range of bottled water in an atmosphere reminiscent of a wine bar).

[73] Norma Meyer, *Rich Man, Pour Man: Bling H_2O Sells $status by the Bottle*, SAN DIEGO UNION TRIBUNE, Mar. 4, 2007.

admission to a trendy nightclub.[74] Outside nightclubs and trendy bars, a plastic version of *Bling H2O* exists "for status-seekers at the gym or pool."[75]

2. *The Reality*

Although consumers adamantly insist that bottle water's taste is superior to that of tap water, many cannot consistently identify bottled water in blind taste tests. A reporter from the television program *20/20* explained,

> We asked people to rate the waters as bad, average or great. Lots of people said one of the waters was particularly bad. Was that the tap water? No. Tap water did pretty well. Even people who said they don't like it, liked it on the blind test. The "20/20" taste test was just one unscientific test, but lots of tests keep finding that people like tap water. I suspect many people who buy the fancy waters are getting suckered by the ads or the labels.[76]

Similarly, in a test conducted by National Public Radio, most samplers mistakenly identified fifty-five dollar per bottle *Bling*H_2O[77] as Manhattan tap water.[78] Likewise, a majority of blind tasters from the *Good Morning America* audience preferred New York City tap water over O_2, *Poland Spring,* and *Evian.*[79]

C. *Myth 3: Convenience*

1. *The Myth*

A third often-cited reason for purchasing bottled water is its convenience.[80] As one observer explained,

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[74] *Id.* (citing an Italian shop that sells the water for $200 per bottle).

[75] *Id.*

[76] *Id.* (quoting reporter John Stossel).

[77] *See supra* notes 72-75 and accompanying text.

[78] National Public Radio, *The Bryant Park Project,* http://www.npr.org/blogs/bryantpark/2007/09/bpp_bling_water_at_55_a_bottle.html.

[79] Howard, *supra* note 13. *See also,* Harry Wallop, *Tap Water Beats Bottles in Taste Test*, THE TELEGRAPH, Dec. 19, 2007; Tom Standage, *Bad to the Last Drop* (op-ed), NEW YORK TIMES, Aug. 1, 2005. *But see Waterloo*, WOMEN'S HEALTH MAGAZINE, http://www.womenshealthmag.com/nutrition/best-bottled-water (awarding New York City tap water 23 points on a scale of 100 points, as tested by three wine experts).

[80] EPA, *supra* note 42.

> Buying bottled water means not having to purchase and fill one's own container. The ability to purchase water readily means that consumers can obtain water when they want it, rather than carrying around a bulky container all day. And when one's thirst is slaked, disposal is just a trash can away; there's no need to bring the bottle home and wash it oneself.[81]

The industry emphasizes the convenience of its product, applicable to both individual bottles and to larger three to five gallon bottles delivered to the home or office. As one bottler advertises, "How many times have you gone to the spigot, run yourself a glass of water, and subsequently grimaced at the taste of the water?"[82] After touting the benefits of its weekly bottled water delivery service, the advertisement concludes, "You might be surprised at the cost and function of quality bottled water services. Not only that, but you won't have to run to the store every time you crave a tall glass of water!"[83]

2. *The Reality*

The third norm of the bottled water culture—convenience—is difficult to dismiss as untruthful. From a short term perspective, it is indeed convenient to purchase a bottle for consumption whenever and wherever the purchaser chooses. But that convenience is not costless: In pure monetary terms, the cost of bottled water ranges from 240 times to 10,000 times the cost of tap water.[84] If the average American family were paying bottled water prices for domestic water consumption, water bills would run into the hundreds of thousands of dollars per year.[85] At the national level, American consumers spend approximately fifteen billion dollars annually on bottled water, including some five billion on treated

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[81] *Bottled Convenience,* ECONOMIST.COM, Mar. 12, 2008 (*Free Exchange* blog posting), http://www.economist.com/blogs/freeexchange/2007/07/bottled_convenience.cfm (visited Mar. 12, 2008). After exploring the convenience issue, the writer concluded that "portability [cannot] be the key factor" accounting for the popularity of bottled water: "If that were the case, rational consumers would simply purchase their own containers and haul relatively cheap tap water around with them. More probably, bottled water's success is about time and energy savings for consumers." *Id.*

[82] *Bottled Water Services: Added Convenience,* ASSOCIATED CONTENT, http://www.associatedcontent.com/article/55437/bottled_water_services_added_convenience.html (visited Mar. 12, 20080).

[83] *Id.*

[84] Blumenfeld & Leal, *supra* note 35; Food and Water Watch, *Take Back the Tap: Why Choosing Bottled Water is Better for Your Health, Your Pocketbook, and the Environment* 1 (2007), www.foodandwaterwatch.org.

[85] National Public Radio, *supra* note 78.

tap water.[86] If the added cost were translated into additional work hours required to earn the differential, one might question whether bottled water is truly convenient.

From a long term social perspective, bottled water is significantly less convenient than tap water. Part of the convenience of plastic bottles stems from their disposability into the nearest trashcan or, less often, recycling bin. Consumers of bottled water and other bottled beverages discard an estimated eighty-six percent of their empty plastic bottles, sending two million tons of plastic bottles to landfills each year.[87] According to one analyst, a year's worth of discarded bottles, placed end-to-end, would encircle the earth more than 150 times.[88] These plastic bottles take over one thousand years to biodegrade,[89] leaving not only the current generation, but also future generations, with the cost and inconvenience of dealing with mounds of plastic waste.

The convenience of bottled water must also be considered in terms of oil consumption, required for both the manufacture of plastic bottles and the transportation of the final product. Overall, the Pacific Institute estimates that the amount of oil required to produce each bottle of water would fill as much as one-quarter of the total volume of the bottle.[90] The United States consumes more than 1.5 million barrels of oil each year for the production of plastic bottles, which is the amount required to fuel 100,000 cars.[91] Furthermore, much of the marketing appeal of bottled water is the exotic source of the water, from Tasmanian rainwater,[92] to Patagonian aquifers,[93] to Canadian glacial melt.[94] Such exotic

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[86] In 2006, consumers in the United States spent $2.17 billion on *Aquafina*, $1.17 billion on *Nestlé Pure Life*, and $1.89 billion on *Dasani*, all varieties of "purified water" derived from the tap. Byron, *supra* note 10.

[87] *Take Back the Tap, supra* note 84. In Chicago, a five-cent tax on bottled water was passed by the city council in part to maintain landfill capacity. Janet Larsen, *Bottled Water Boycotts: Back-to-the-Tap Movement Gains Momentum,* EARTH POLICY INSTITUTE, Dec. 7, 2007.

[88] Eric Horng, *Ditching Bottled Water to Go Green: Critics of Bottles Say Plastic Containers Foul the Earth,* ABCNEWS, July 8, 2007, http://abcnews.go.com/WN/GlobalWarming/story?id=3351812&page=1 (last visited Mar. 12, 2008).

[89] Blumenfeld & Leal, *supra* note 35.

[90] Pacific Institute, *Bottled Water and Energy: A Fact Sheet*, *available at* http://www.pacinst.org/topics/water_and_sustainability/bottled_water/bottled_water_and_energy.html.

[91] *Id.* (calculating oil requirements for manufacture of plastic bottles for total United States bottled water consumption in 2006, from "the 8-ounce aquapods popular in school lunches to the multi-gallon bottles found in family refrigerators and office water coolers").

[92] *See* http://www.cloudjuice.com.au (website of *King Island Cloud Juice*).

products incur significant transportation costs, as almost one-quarter of all bottled water crosses international borders.[95] This oil consumption also generates environmental costs, through the release of greenhouse gases that contribute to climate change. As one commentator asserts, "It's ironic that on some of the labels of the bottles, you see snow-capped mountains and glaciers when in fact the production of the bottle is contributing to global warming, which is melting those snowcaps and those glaciers."[96]

Admittedly, numerous other plastic-packaged products create the same problems of waste disposal, oil consumption, and global warming pollution. But only bottled water has a readily-available, low-cost substitute: tap water, delivered to virtually every home and business through the power of gravity flow, rather than through the consumption of fossil fuels.[97] With oil prices reaching an unprecedented high of one hundred dollars per barrel in early January 2008,[98] and with the President calling for the United States to "get off oil,"[99] the economic, social, and environmental costs of bottled water are increasingly difficult to justify in the name of convenience.

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[93] *See http://www.lauquenwater.com/* (website of *Lauquen Artesian Mineral Water*) ("Created by nature in the endless heart of the New Patagonia, Lauquen Artesian Mineral Water comes from eternal pure ice and rain naturally purified by the Andes Mountains, and imbued with a unique blend of minerals").

[94] Fine Waters, *Bottled Water of Canada, http://www.finewaters.com/Bottled_Water/Canada/10_Thous_BC.asp* (last visited Feb. 9, 2008) ("Locked in an icy vault for over 10,000 years, 10 Thousand BC glacier water comes from melted glacier ice. The source boasts an average daily flow rate of 365 million US gallons and is located in the pristine Coastal Glacier Range in British Columbia, Canada approximately 200 miles north of Vancouver and 36 miles east into the inlet").

[95] Larsen, *supra* note 87.

[96] Horng, *supra* note 88 (quoting Allen Hershkowitz of the Natural Resources Defenses Council).

[97] Horng, *supra* ("By contrast [to bottled water], tap water is delivered using little or no oil. New York City's water, for instance, flows by force of gravity.").

[98] Jad Mouawad, *Oil Hits $100 a Barrel for the First Time*, INTERNATIONAL HERALD TRIBUNE, Jan. 2, 2008 (noting that oil prices briefly hit the one hundred dollar mark and then fell slightly lower).

[99] Steve Hargreaves, *Bush: Use Ethanol to Get Off Oil,* CNNMONEY.COM, *available at* http://money.cnn.com/2008/03/05/news/bush_ethanol/index.htm (last visited Mar. 12, 2008) (describing the President's response to record crude oil prices, and his conclusion that "I'm confident the United States can meet those goals, for the sake of national security and the environment").

III. LAW, CULTURE, AND BOTTLED WATER

Law and culture are engaged in a perpetual dance, spinning and weaving their way through space and time. Like dance, the socio-legal dialectic can be a thing of beauty and order. But unlike traditional dance, each partner must take its turn at leading lest the dance become clumsy and awkward. At times, culture leads through the evolution of social norms that may later be crystallized into law. The cultural lead is important, providing nimbleness, nuance, and currency. But the law must also take its turn at leading, shaping social norms through legal mandate. At times, the law even performs an action-forcing role, compelling the partners to take new steps they never thought possible. The law's role is critical, providing ballast, gravitas, and legitimacy to the dance.

In the case of bottled water, this desirable push-pull of law and culture has been precariously imbalanced. Over the last decade or so, cultural norms have embraced bottled water, establishing it as a staple of modern life with perhaps ill-considered enthusiasm. Through a feat of alchemic proportions, the advertising industry has transformed bottled water into social *bling*,[100] a status symbol that claims to promote health and happiness far better than ordinary water. But even as bottled water has climbed to new heights of popularity and market success, opposing cultural forces have initiated a backlash, questioning its superiority, as well as the wisdom and morality of its consumption.[101] During this meteoric rise of bottled water—and throughout the initial stages of its potential decline—the law has been a silent partner to culture, abdicating its role as co-constituent of governing norms. As a result, an element essential to the sustenance of life remains under-regulated.[102]

A. Culture: The Socio-Normative Heuristic

Culture is an important source of meaningful legal content, well-suited to the role of heuristic. As society works out acceptable codes of conduct through trial and error, the cultural cauldron seethes with the makings of a vibrant yet stable social order. At a trivial level, cultural fads may rise and fall with little social cost. More deeply, cultural twists and turns may not be costless, but they provide a potentially more efficient fomentation process than their legal counterparts of legislative enactment and amendment. That is, informal social

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[100] A recent addition to the English language, "bling" (and its variant "bling-bling") is defined as "flashy jewelry worn especially as an indication of wealth; *broadly*: expensive and ostentatious possessions." *See* Merriam-Webster Online Dictionary, http://www.merriam-webster.com/dictionary/blind (visited Feb. 6, 2008). Indeed, there is a brand of bottled water known as "blingh$_2$o," which markets itself as "more than a pretty taste." *See supra* notes 72-75 and accompanying text.

[101] *See infra* Part III.C.

[102] *See infra* Part IV

rules can change more adroitly and less expensively than can formally-enacted laws.

As cultural norms stabilize, the emergent social values and practices may be codified into law. At times, entire informal codes of conduct—custom—may be transplanted wholesale into the law. This process is illustrated by the familiar fox and whale cases, used by many Property law casebooks to illustrate the acquisition of title under the rule of capture. Pierson v. Post,[103] for example, features a debate between majority and dissent as to the value of custom as a source of law. The case provides a type of morality play, featuring the characters of Persistence (the gentleman hunter and his hounds who began their hunt at day-break), Opportunism (the "saucy intruder" who swoops in and captures the hunt-fatigued fox at day's end), and Evil (the "wily quadruped" and "noxious beast[] called a fox").[104] The majority declined to provide legal redress to the first hunter, even though he was deprived of the fruits of his labor by the "uncourteous or unkind . . . conduct [of the late-appearing hunter]."[105] In contrast, the dissent argued that the "knotty point . . . should have been submitted to the arbitration of sportsmen."[106] Although *Pierson* declined to recognize custom as a source of law in this 1805 New York decision, other courts have done precisely that. In 1881, for example, a federal district court in Massachusetts determined title to a whale in accordance with local whaling customs.[107] The court noted that the customary rule "works well in practice . . . [as shown] by the extent of the industry which has grown up under it, and the general acquiescence of a whole community interested to dispute it."[108]

Like the law governing ownership of wild animals and other fugitive resources, the law of water allocation (a potential regulator of the bottled water industry) has been significantly influenced by custom. Just after the gold rush of 1848, the California Supreme Court adopted the now dominant western water law doctrine of prior appropriation.[109] Incorporating the maxim of equity "first in

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[103] Pierson v. Post, 2 Am. Dec. 264 (N.Y.S.Ct. 1805).

[104] *Id.*

[105] *Id.*

[106] *Pierson,* 2 Am. Dec. at 264 (Livingston, J., dissenting) (arguing that a group of sportsmen would have had "no difficulty in coming to a prompt and correct conclusion" that would "interfer[e] with no usage or custom which the experience of ages has sanctioned, and which [was] . . . well known to every votary of Diana").

[107] Ghen v. Rich, 8 F. 159 (D. Mass. 1881).

[108] *Id.*

[109] Irwin v. Phillips, 5 Cal. 140 (Cal. 1855) (resolving competing claims to divert water from natural streams "by the fact of priority upon the maxim of equity, *qui prior est in tempore potior est in jure"*).

time, first in right," the system satisfies the needs of competing claimants in order of the temporal priority under which their water uses were first established.[110] The court consciously adopted this principle from the practices of the mining camps, asserting that "[c]ourts are bound to take notice of the political and social condition of the country, which they judicially rule."[111] Recognizing the porosity of the law-culture divide, the court reasoned, "[i]f there are, as must be admitted, many things connected with this system, which are crude and undigested, and subject to fluctuation and dispute, there are still some which a universal sense of necessity and propriety have so firmly fixed as that they have come to be looked upon as having the force and effect of *res judicata.*[112]

B. Law: The Catalyst for Cultural Evolution

As discussed above, social norms are a potent force in the lawmaking process. But culture and custom can take us only so far, and law must do more than simply reflect cultural conventions. It must also nudge, mandate, and prohibit, thereby shaping culture. Most importantly, law provides a muscular oversight that legitimizes social practices, ensuring protection of individual rights as well as the broader public interest.

In many instances, law has moved culture forward, both incrementally and aggressively. In the realm of environmental law, for example, so-called technology-forcing statutes have achieved dramatic reductions in the air pollution emitted by automobiles and other mobile sources, albeit after much resistance and litigation.[113] As explained by one prominent casebook,

> In what one senator described as perhaps the "biggest industrial judgment that has been made in the U.S. in [the twentieth] century,"[114] . . . Congress [through the 1970 Clean Air Act] directed automotive manufacturers to curtail emissions of hydrocarbons and carbon monoxide from new vehicles by 90 percent within five years [and to achieve similar reductions in

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[110] *Id.*

[111] *Id.* (noting that the prior appropriation doctrine "[had] been permitted to grow up by the voluntary action and assent of the population"). Although non-customary factors also contributed to the development of the prior appropriation doctrine, "the conquest of the region by the early miners and pioneers" has "taken on the aura of a sacred myth" that continues to influence modern water attorneys. A. DAN TARLOCK ET AL., WATER RESOURCE MANAGEMENT: A CASEBOOK IN LAW AND PUBLIC POLICY 75 (5th ed. 2002).

[112] *Irwin,* 5 Cal. at 140.

[113] PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 604-10 (3d ed. 2000).

[114] *Id.* at 606-07, citing 116 Cong. Rec. 33085 (1970) (remarks of Sen. Baker).

> nitrogen oxide emissions within one additional year.] Congress decided on a 90-percent reduction by relying on the simple notion that since air pollution levels in major cities were approximately five times the expected levels of the [national ambient air quality standards], emissions would need to be reduced by at least 80 percent, with an additional 10 percent necessary to provide for growing vehicle use.[115] A committee staff member . . . described the 90-percent rollback requirements as "a back of the envelope calculation. . . . We didn't have any particular methodology. We just picked what sounded like a good goal."[116]

As a result of these technology-forcing provisions, General Motors agreed that automobiles would come equipped with catalytic converters beginning with its 1975 models.[117] Although actual performance fell short of the contemplated standards and deadlines, most agree that such "emissions controls ultimately produced dramatic results in vehicle emissions."[118] Further, it is unlikely social pressure alone could have achieved equally favorable results.

In the case of water, the law has nudged usage practices in the direction of increased efficiency and environmental sensitivity.[119] For example, the so-called public trust doctrine has functioned as a limit on private water use.[120] In addition, federal statutes such as the Clean Water Act[121] and the Endangered Species Act[122] have added layers of environmental and public interest protection to the otherwise private-property orientation of state water law.

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[115] *Id.* at 607, citing S. Rep. No. 91-1196, 91st Cong., 2d Sess. at 25 (1970).

[116] *Id.,* citing Easterbrook, *Cleaning Up,* NEWSWEEK, July 24, 1989, at 29.

[117] *Id.* at 609-10.

[118] *Id.* at 610.

[119] *See infra* notes 216-20, 238, and accompanying text.

[120] *See* Illinois Central Railroad Co. v. Illinois, 146 U.S. 387 (1892) (holding that the Illinois legislature lacked authority to "deprive the state of its ownership of the submerged lands in the harbor of Chicago" because the title was "held in trust for the people of the state [for navigation, commerce, and fishing] . . . freed from the obstruction or interference of private parties"); National Audubon Society v. Superior Court of Alpine County, 658 P.2d 709 (Cal.), *cert. denied,* 464 U.S. 977 (1983) (applying public trust doctrine to non-navigable tributaries of navigable Mono Lake).

[121] South Florida Water Management Dist. v. Miccosukee Tribe of Indians, 541 U.S. 95 (2004), *rehearing denied,* 124 S.Ct. 2198 (2004) (holding that the Clean Water Act's NPDES permitting program applies to "point sources that do not themselves generate pollutants," potentially requiring a permit for a water transfer from one "meaningfully distinct" water body to another).

[122] Riverside Irrigation District v. Andrews, 758 F.2d 508 (10th Cir. 1985) (plaintiffs seeking to build a dam and reservoir on Wildcat Creek must demonstrate that the discharged of dredged material during dam construction will not violate section 7 of the Endangered Species Act).

C. *Bottled Water: An Opportunity for Cultural-Legal Dialogue*

Bottled water has given rise to a loyal subculture of beverage drinkers, united by the truths and myths of bottled water that they embrace.[123] More recently, an equally rich subculture of water protest has begun to coalesce.[124] Notably, the cultural norms evidenced by supporters and detractors go far beyond mere hydration, touching upon such far-flung notions as health, taste, convenience, status, sustainability, and even attractiveness to the opposite sex.[125] In contrast, the legal narrative is strikingly sparse, providing an opportunity for the law of water allocation might stimulate the unrealized dialectic between law and culture.[126]

1. The Anti-Bottled Water Culture

A growing constellation of forces has begun to gain traction in challenging the value of bottled water.[127] This nascent anti-bottled water culture includes environmental organizations, consumer rights advocates, college students, religious groups, and even television celebrities. For example, in 1999 the Natural Resources Defense Counsel published a report entitled *Bottled Water: Pure Drink or Pure Hype?*[128] Citizen groups have also joined forces to protest the use of their aquifers by water bottlers. Michigan protestors took to the streets with signs denouncing the proposed construction of a *Perrier* bottling operation outside Grand Rapids.[129] More recently, *Think Outside the Bottle* paired with *Corporate Accountability International* to pressure Pepsi-Cola and Coca-Cola to inform consumers that *Aquafina* and *Dasani* come directly from municipal tap water.[130] Students have also joined in, forming more than one hundred "boycott the bottle" groups, or signing pledges to refrain from buying bottled water.[131]

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[123] *See infra* Part II.

[124] *See infra* Part III.C.

[125] *See infra* Part II.

[126] *See infra* Part III.

[127] Alex Williams, *Water, Water Everywhere But Guilt by the Bottleful*, N.Y. TIMES, Aug. 12, 2007. *See also* www.tappening.com.

[128] *See supra* note 4 and accompanying text.

[129] Christine A. Klein, *The Environmental Commerce Clauses,* 27 HARV. ENVT'L L. REV. 1, 18-23 (2003). *See* Michigan Citizens for Water Conservation v. Nestlé Waters North America Inc., 709 N.W.2d 174, 185 (Mich. App. 2006), *rev'd in part on other grounds,* 737 N.W.2d 447 (Mich. 2007) (holding that plaintiffs lacked standing to pursue some of their claims).

[130] *See* Think Outside the Bottle, http://www.thinkoutsidethebottle.org.

[131] Tony Azios, *The Battle Over Bottled vs. Tap Water,* CHRISTIAN SCIENCE MONITOR, Jan. 17, 2008, *available at* http://www.csmonitor.com/2008/0117/p15s03-sten.htm; Janet Larsen, *Bottled*

Private efforts to wean the United States from bottled water are notable in the restaurant industry, where a bottle of water sold for sold for one dollar wholesale can be resold to customers for as much as nine dollars retail. Reacting to this mark-up and to other concerns, famed chef Alice Waters of the Bay Area's *Chez Panisse* restaurant stopped serving bottled water by 2007, including carbonated varieties.[132] Tap water advocates have recognized Chef Waters' efforts to advance the "eat local" movement, dubbing her the "godmother of sustainability."[133]

Popular celebrities have also reversed course. Oprah Winfrey once extolled the virtues of her favorite bottled water.[134] By 2008, she had begun to repudiate bottled water, dedicating a segment to "Going Green 101: What Your Family Can Do Today!"[135] Among other things, that segment and accompanying website information informed viewers, "When you buy one liter of water at the store, you're actually consuming about six liters of water. That's because when manufacturers make plastic bottles, it takes five liters of water to cool the plastic."[136] As an alternative, Winfrey recommends using a water filter and reusable aluminum or plastic bottle.[137]

Some religious groups have also mounted opposition to bottled water, including the National Council of Churches of Christ, the National Coalition of American Nuns, and the United Church of Christ.[138] For example, the Presbyterians for Restoring Creation, a group that promotes "wise, humble, [and] responsible stewardship, after the model of servanthood . . . in Jesus," has urged church members to pledge to avoid the use of disposable plastic water bottles and to support public water utilities.[139] These organizations combine

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Water Boycotts: Back-to-the-Tap Movement Gains Momentum, EARTH POLICY INSTITUTE, Dec. 7, 2007.

[132] Carol Ness, *Local Tap Water Bubbles Up in Restaurants*, S.F. CHRONicle, Mar. 21, 2007. Prior to this, *Chez Panisse* annually served nearly 24,000 bottles of *Santa Lucia*, mineral water imported from Italy. *Id.*

[133] *Id.*

[134] *See supra* notes 63-64 and accompanying text.

[135] The Oprah Winfrey Show, *It's Easy Being Green* (follow links to "action step 4").

[136] *Id.* (quoting guest Simran).

[137] *Id.*

[138] *Is Bottled Water a Moral Issue?*, THE CHRISTIAN CENTURY MAGAZINE, Jan. 9, 2007.

[139] Presbyterians for Restoring Creation, *H_2O: How to Overcome the Bottled Water Habit,* http://www.prcweb.org/ (follow links to "Resources—Bottled Water Campaign") (last visited Feb. 6, 2008).

environmentalism with spirituality, emphasizing the sacredness of water, the need to be stewards of the earth, and the disparity in access to clean water around the world.[140] One Catholic priest referred to "the sacramental system of the wide availability of clean, free water."[141]

Together, these efforts by both nonprofit and for-profit entities contain the raw material of an evolving cultural norm that promotes anti-privatization, sustainability, and truth-telling. In juxtaposition, the bottled water culture draws from, and contributes to, the norms advancing health, purity, taste, and convenience. These two powerful and antithetical value systems are struggling mightily to control an activity at once profound and profane—satiating human thirst. The law has been conspicuously absent in this process, with only a few minor exceptions.[142]

2. *The Sustainability Norm*

The rise and potential decline of bottled water represents an important cultural phenomenon, highlighting a tension among values at the core of our national identity. The increased popular resistance to the rise of the bottled water industry rides on a re-awakening of the United States to fundamental environmental values that helped to shape much of the nation's early environmental legislation. This re-awakening comes at the convergence of many factors: prominent recognition of environmental activists as Nobel Peace Prize winners and nominees, including Kenyan activist Wangari Maathai,[143] Al Gore and the Intergovernmental Panel on Climate Change,[144] and Inuit activist Sheila Watt-Cloutier;[145] the impact of disastrous hurricane seasons in 2004 and 2005 and severe drought across the southeastern United States;[146] and recognition by the

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[140] Laura Lloyd, *Religious Orders Bring Clout to War on Bottled Water*, NAT'L CATHOLIC REP., Jan. 11, 2008.

[141] *Id.*

[142] *See infra* Part IV.A.

[143] *See* Nobelprize.org, *Wangari Maathai,* http://nobelprize.org/nobel_prizes/peace/laureates/2004/maathai-bio.html (recognizing Maathai as winner of 2004 prize "for her persistent struggle for democracy, human rights and environmental conservation").

[144] *See Al Gore and Sheila Watt-Cloutier Nominated for Nobel Peace Prize,* TIME, Feb. 3, 2007, http://news.taume.com/World-Business/World/Al-Gore-and-Sheila-Watt-Cloutier (recognizing efforts "to bring the dangers of global warming to world attention").

[145] *Id.*

[146] *See infra* note 153 and accompanying text.

highest court in the land that climate change is a factor to be reckoned with.[147] Events such as these have occurred as the United States has struggled to define itself in the twenty-first century, clinging to the affluence and convenience it has come to enjoy, but looking forward to provide a sustainable nation for its children. In the midst of this national introspection, bottled water has become an unlikely icon of evolving cultural norms, as one generation gives way to the next.

The impact of water bottling on sustainability may be most apparent at the local level. Despite its advertising-induced mystique, most bottled water comes from exactly the same water sources that are relied upon by all other water users, including municipal tap water providers, farmers, and factories. As such, bottlers are in direct competition with other users in times of shortage. Every drop of water captured in a bottle is a drop of water that cannot be used by others. Lake County, Florida, for example, considered luring the California-based Niagara Bottling company to its community with a $2.3 million incentive package, which would support the company's bid for a permit to pump 484,000 gallons of water per day from the local aquifer over the next twenty years.[148] At the same time, the community faced an imminent shortage of groundwater within the next six years, and was scrambling to develop a multi-million dollar system of pipes to pump in water from surface rivers.[149] Ultimately, the county leaders decided that, under the circumstances, "Conservation right now is what we have to be doing. By even allowing a company to come in and bottle and sell our water is completely irresponsible."[150]

3. *The Anti-Privatization Norm*

Over the past several decades, the private sector has taken over numerous responsibilities previously entrusted to the government. Efforts to shrink the federal government and to cut taxes have curried political favor, leading to ever-increasing privatization. In fact, the privatization movement has garnered such support that it has influenced even the conduct of war.[151]

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[147] Massachusetts v. Environmental Protection Agency, 549 U.S. (2007) (holding that greenhouse gases are "pollutants" within the meaning of the Clean Air Act and that the EPA has authority to regulate carbon dioxide and other greenhouse gases).

[148] Robert Sargent, *Lake County Water Too Scarce for Bottling Plant: Commissioners Say They Do Not Support Niagara's Bid to Open a Plant*, ORLANDO SENTINEL, Nov. 7, 2007, *available at* http://www.orlandosentinel.com/news/local/lake/orl-lwater0707nov07,0,3870420.

[149] *Id. See also* Robert Sargent, *Water Company Vows to Fight Groveland: Niagara Bottling Co. Says the City Must Give it Sewer Service,* ORLANDO SENTINEL, Oct. 25, 2007, *available at* http://www.orlandosentinel.com/news/local/lake/orl-lwater2507oct25,0,4661440.

[150] Sargent, *Lake County, supra* note (quoting Lake County Commissioner Linda Stewart).

[151] *Private Warriors,* FRONTLINE, http://www.pbs.org/wgbh/pages/frontline/shows/warriors/faqs/ (last visited Feb. 9, 2008) (estimating that some 56 private contracting firms operate in Iraq, employing up to 140,000 non-Iraqis for support logistics, security, and reconstruction).

Recently, however, the pendulum has begun to swing in the opposite direction, as a series of natural disasters and human crises have led to a renewed appreciation for the value of government. The terrorist attacks of September 11, 2001 triggered the formation of the Department of Homeland Security,[152] and the devastation wrought by Hurricane Katrina prompted an overhaul of the Federal Emergency Management Agency.[153] Likewise, the importation of contaminated pet food, toothpaste, and toys from China prompted calls for strengthened oversight by the U.S. Food and Drug Administration and the U.S. Consumer Product Safety Commission.[154] Moreover, a massive default on home mortgage payments, followed by a wave of foreclosures, gave rise to promises for strengthened oversight by the Federal Reserve System and consumer protection agencies.[155] Finally, in a turn of events unthinkable just a decade earlier, a majority of Americans have come to favor government intervention in order to provide health insurance for all.[156] As New York Times columnist David Brooks explained in 2007, most Americans "want a federal government that will focus on

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[152] Department of Homeland Security, http://www.dhs.gov/index.shtm.

[153] FEMA, *Hurricane Katrina: One Year Later,* http://www.fema.gov/hazard/hurricane/2005katrina/anniversary.shtm (last visited Feb. 9, 2008). According to David Paulison, FEMA Director:

> Hurricane Katrina was the most catastrophic natural disaster in our nation's history and the lives lost will not be in vain as FEMA works to learn from the lessons of this unprecedented storm. This disaster has changed the face of the entire emergency management community, from the international and federal levels to state and local levels; we must all embrace the lessons from Katrina and improve our capabilities. We must remember the devastation wrought by Katrina and remove any complacency with regard to preparing ourselves and our loved ones for disasters.

Id.

[154] *China Bans Lead Paint in Toys Exported to U.S.: Countries Also Agree to Regular Meetings About Recall Trends,* MSNBC.COM, Sept. 11, 2007, http://www.msnbc.msn.com (follow links to id/20726149).

[155] Ben S. Bernanke, Chairman, Board of Governors of the Federal Reserve System, *Testimony on Subprime Mortgage Lending and Mitigating Foreclosures Before the Committee on Financial Services, U.S. House of Representatives,* Sept. 20, 2007, *available at* http://www.federalreserve.gov/newsevents/testimony (follow links to bernanke20070920a.htm) ("The Federal Reserve takes responsible lending and consumer protection very seriously. Along with other federal and state agencies, we are responding to the subprime problems on a number of fronts.").

[156] According to a February 2007 CBS/New York Times poll, 64% of respondents believed that the government should "guarantee health insurance for all" and a majority believed that "government can do a better job than private companies at helping hold down health care costs." However, less than one-third of respondents believed "the government would do a better job than private insurance companies at actually providing medical coverage." CBS News, *Poll: The Politics of Health Care,* Mar. 1, 2007, *available at* http://www.cbsnews.com/stories/2007/03/01 (follow links to opinion/polls).

a few macro threats—terrorism, health care costs, energy, entitlement debt and immigration . . . . This is not liberalism . . . . This is not conservatism . . . . It's a gimlet-eyed federalism—strong government with sharply defined tasks."[157]

This move away from privatization has potential repercussions for the bottled water market. A growing number of groups have criticized the privatization of water, including both the provision of water services and the resource itself.[158] As one group argues,

> A worldwide crisis over water is brewing. According to the United Nations, 31 countries are now facing water scarcity and 1 billion people lack access [to] clean drinking water. Water consumption is doubling every 20 years and yet at the same time, water sources are rapidly being polluted, depleted, diverted and exploited . . . .
>
> Rather than taking the dramatic action necessary to protect precious water resources, governments around the world are retreating from their responsibilities. Instead of acting decisively, they are bending to the will of giant transnational corporations that are posed to profit from the shortage of water. *Fortune* magazine has predicted that "water is the oil of the 21st century" and corporations are rushing to invest in the water business.[159]

The bottled market industry has been criticized for contributing to the privatization of water, with impacts ranging from the unnecessary use of plastic, to "the undercutting of financing for high quality public water systems by the growing dependence on bottled water," to "most fundamentally, turning water into a commodity to be sold for profit."[160]

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[157] David Brooks, *The Happiness Gap,* NEW YORK TIMES, Oct. 30, 2007.

[158] *See* Jim Lobe, *Stop Privatizing Water, NGOs Tell Developed Countries,* COMMON DREAMS NEWS CENTER, May 27, 2003, http://www.commondreams.org/cgi/bin/headlines03/0527-05.htm (last visited Feb. 9, 2008) (describing challenge by more than 100 non-governmental organizations to the European Union's "push for water privatization in developing countries"); *Water for Profit: How Multinationals Are Taking Control of a Public Resource,* CBCNEWS, http://www.cbc.ca/news/features/water/ (last visited Feb. 9, 2008) (asserting that "[i]n the past ten years, three giant global corporations have quietly assumed control over the water supplied to almost 300 million people in every continent of the world" with results ranging "from questionable to disastrous"). *See also* Aldo Davilla and Andrew Whitford, *Water, Water, Everywhere?: Legal Structures for the Contracting and Privatization of Public Water Resources,* 15 MO. ENVTL. L. & POL'Y REV. 49 (2007),

[159] Public Citizen, *Water Privatization Overview,* http://www.citizen.org/cmep/Water/general/ (last visited Feb. 9, 2008).

[160] Sierra Club, *Take Action: Take the Pledge!,* http://www.sierraclub.org/committees/cac/watere/ (last visited Feb. 9, 2008).

4. *The Truth-Telling Norm*

The bottled water industry may have become a victim of its own advertising success, triggering a cultural backlash against inflated claims rooted in myth as much as in reality. Critics have begun to claim they have been "duped" by disingenuous advertising,[161] and some now counter that bottled water is no healthier than tap water; tastes no better; and that it is actually less convenient than tap water from a broader socio-economic perspective. Reflecting upon the excess costs, plastic waste, and oil usage generated in the name of short-term convenience, one critic wryly observed, "The success of bottled water is in many ways one of capitalism's greatest mysteries. . . . To many, all this is the ultimate proof that consumers are daft and easily manipulated by retailers to buy things they don't need."[162]

IV. ENRICHING THE DIALOGUE: THE NEGLECTED ROLE OF STATE WATER LAW

To date, the growing backlash against bottled water—uniting environmental organizations, consumer rights advocates, restaurateurs, religious leaders, and even television celebrities—[163] has had little impact upon legal norms. A few cities have exercised the power of the purse, forbidding the expenditure of municipal funds for bottled water, or imposing bottle taxes upon consumers.[164] But lawmakers have overlooked perhaps the most appropriate tool for bringing the bottled water industry into harmony with evolving cultural norms: the states' statutory and common law governing the initial appropriation of water resources.

Only two states have come close to weighing the relative merits of bottled water, as measured against the evolving cultural norms embodied in their water allocation laws. In both cases, the analysis was in a judicial forum, necessarily producing reactive and fact-specific decisions, rather than comprehensive legislative guidance. And in both cases, the courts were precluded from fully addressing the merits by legal considerations extraneous to the law of water allocation. In Michigan Citizens for Water Conservation v. Nestlé Waters North

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[161] Azios, *supra* note 131 (quoting college student's assertion "I felt slightly duped" after failing to identify bottled water in a blindfolded taste test, despite previous beliefs that bottled water is healthier and tastes better). *See also* Howard, *supra* note 13 (describing lawsuit in which plaintiffs "charged that Nestlé duped consumers by advertising that Poland Spring water comes from 'some of the most pristine and protected sources deep in the woods of Maine,' . . . [despite the fact that] ever since the original Poland Spring was shut down in 1967, the company has used man-made wells, at least one of which is in a parking lot along a busy road").

[162] *Bottled Water and Snake Oil*, THE ECONOMIST, July. 31, 2007.

[163] *See supra* Part III.C.

[164] *See infra* Part IV.A.

America Inc., the state court of appeals found a proposed withdrawal of groundwater to be "unreasonable" under the circumstances, but its opinion was vacated on standing grounds.[165]

In the second case—Sipriano v. Great Spring Waters of America, Inc.—the Texas Supreme Court refused to enjoin defendant water bottler, even though its pumping "about 90,000 gallons of groundwater per day, seven days a week, from land near [the plaintiff's land] . . . severely depleted [plaintiff's wells]."[166] In this 1999 decision, the court declined an opportunity to modernize the state's common law of groundwater, even though the existing law was based upon the 1861 observation that groundwater movement is "so secret, occult, and concealed that an attempt to administer any set of legal rules in respect to [it] would be involved in hopeless uncertainty, and would, therefore, be practically impossible." The court acknowledged the need for water law to evolve in tandem with social norms:

> We do not shy away from change when it is appropriate. We continue to believe that "the genius of the common law rests in its ability to change, to recognize when a timeworn rule no longer serves the needs of society, and to modify the rule accordingly." And Sipriano presents compelling reasons for groundwater use to be regulated.[167]

Despite that observation, the court deferred to the state legislature as the appropriate regulator of water under the state constitution. [168]

A. Regulating the Periphery: The Bottle Delivery System

A few cities have begun to discourage the consumption of bottled water. Most notably, San Francisco Mayor Gavin Newsom issued an executive order in 2007, banning the use of city funds to purchase bottled water.[169] In his order, the Major claimed that bottled water is "often inferior to the quality of San Francisco's pristine tap water," and cited to the waste and pollution generated by

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[165] 709 N.W.2d 174, 185 (Mich. App. 2006), *rev'd in part on other grounds,* 737 N.W.2d 447 (Mich. 2007) (holding that plaintiffs lacked standing to pursue some of their claims).

[166] 1 S.W.3d 75, 76 (Tex. 1999).

[167] *Id.* at 80.

[168] *Id.* at 78 (opining that "[w]ater regulation is essentially a legislative function" under the Texas constitution).

[169] Mayor Newsom criticized bottled water advertisements disparaging "better-regulated, pristine tap water delivered by San Francisco government to its residents." Office of Mayor Gavin Newsom, City & County of San Francisco, Exec. Direc. 07-05, *Permanent Phase-Out of Bottled Water Purchases by San Francisco City and County Government*, June 21, 2007.

bottled water.[170] Salt Lake City and Minneapolis have instituted bans on bottled water similar to that of San Francisco.[171] Beyond such bans, in 2008 the city of Chicago implemented a five-cent tax on bottled water purchased in the city.[172] Chicago anticipates that the tax will generate more than ten million dollars of increased revenue, while bottled water industry experts estimate that bottled water sales in the city will drop by fifty percent.[173] These examples suggest that, at least in some places, social norms have begun to turn against the excess consumption of bottled water.

B. Regulating Inside the Bottle: The Allocation of Water Rights

State water law is uniquely suited to the task of translating cultural norms into law. The customs of nineteenth century mining camps, for example, were an important source of the western "prior appropriation" doctrine, protecting water rights according to the maxim "first in time, first in right."[174] In the wake of the California gold rush, the state supreme court gave its imprimatur to this customary system.[175] Once established in accordance with existing practices, water doctrines have exhibited a special ability to evolve in tandem with cultural values.[176] As one prominent commentator has noted, "change is the unchanging chronicle of water jurisprudence."[177]

Although water law varies significantly from state to state, two primary doctrines govern the allocation of water rights among competing users. With respect to surface water, the eastern states generally follow the riparian doctrine under which water rights are limited to "riparians," those who own land that abuts a natural stream or lake.[178] Each riparian may make "reasonable use" of the

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[170] *Id.* San Francisco is one of a handful of American cities whose water supply is so pure that no filtration is necessary. Bill Marsh, *Battle Between the Bottle and the Faucet,* NEW YORK TIMES, July 15, 2007.

[171] *Id.*

[172] Stacy St. Clair, *Chicago Braces for Bottled-Water Tax*, CHI. TRIB., Dec. 30, 2007.

[173] *Id*.

[174] *See supra* note 110 and accompanying text.

[175] *Id*.

[176] *See* Lancey v. Clifford, 54 Me. 487, 491 (1867) (expanding the concept of navigability by recognizing the common law's "wonderful adaptation to the vicissitudes of human affairs . . . as unfolded in the progress of society").

[177] Joseph L. Sax, *The Constitution, Property Rights and the Future of Water Law,* 61 COLO. L. REV. 257, 268 (1990).

[178] *See generally,* TARLOCK ET AL., *supra* note 111, at 111-12.

adjacent watercourse, with due regard for the reasonable uses of other riparians.[179] When water is scarce, all riparians must share the resource.[180] In contrast, most western states follow the prior appropriation doctrine under which the first person to appropriate water for a "beneficial use" has a better right than all subsequent users.[181] In times of shortage, water is allocated in order of temporal priority.[182] A number of states have complemented (or even replaced) the common law with statutory water codes, but theses codes tend to retain the flavor of the foundational common law. For the purpose of this Article, these two surface water doctrines may govern the acquisition of water rights for the bottling of "purified water," the category of bottled water derived from municipal water supplies or other treated sources.[183] An estimated twenty five to forty percent of bottled water comes from public water supplies.[184] When that public water supply comes from surface water (as opposed to groundwater), then the municipality's water rights will be allocated initially in accordance with the riparian or prior appropriation doctrines.

In many states, groundwater is subject to rules distinct from those that apply to surface water, although the concepts of "reasonable use" and "beneficial use" are relevant. These groundwater rules fall into three general categories. First, some states follow a rule of capture, either the traditional English[185] rule or the

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[179] As one court explained,

> A proprietor may make any reasonable use of the water of the stream in connection with his riparian estate and for lawful purposes within the watershed, provided he leave the current diminished by no more than is reasonable, having regard for the like right to enjoy the common property by other riparian owners.

Stratton v. Mt. Hermon Boys' School, 103 N.E. 87, 89 (Mass. 1913). The reasonable use requirement, as applied to bottled water, is considered in *infra* Part III.B.1.

[180] TARLOCK ET AL., *supra* note 111, at 136, quoting the Restatement (Second) of Torts, § 850 (1979), comment (a) ("riparian doctrine contemplates sharing in times of shortage while the appropriation system does not").

[181] The concept of beneficial use serves an "allocative" function, identifying utilitarian "purposes to which water rights [are] properly allocated." TARLOCK ET AL., *supra,* at 111. Beneficial use also serves a "distributive" function, rooting out wasteful practices that use "far greater quantities of water than are needed to fulfill particular purposes. . . ." *Id.* The beneficial use requirement, as applied to bottled water, is examined in *infra* Part IV.B.2. A number of states also follow a hybrid approach, generally following the appropriation doctrine for more recent water rights, but continuing to recognize existing riparian rights. *See generally* TARLOCK ET AL., *supra* note 111, at 88-89.

[182] *See supra* note 10 and accompanying text.

[183] *See supra* Part I.A.

[184] *See supra* note 10 and accompanying text.

[185] In its strictest form, the rule of capture is called the "absolute ownership doctrine" or the "English rule." This doctrine awards landowners an unlimited right to extract water from beneath

modified American rule.[186] Under both variations, the rule of capture gives landowners broad rights to withdraw water from the aquifers underlying their property. Although the English rule has little or no regard for competing water users, the American rule limits landowners to reasonable use of the underlying aquifer.[187] A second group of states follows the "correlative rights" doctrine, also restricting groundwater use to overlying landowners, but resolving disputes under principles of reasonable use and equitable sharing rather than capture.[188] Yet another group of states recognizes groundwater rights in accordance with prior appropriation principles (including beneficial use), modified as necessary to suit the groundwater context.[189] These three doctrines apply to bottled water derived from groundwater sources, variously marketed as "spring water," "artesian water," or "mineral water."[190] They may also apply to "purified water" that relies upon a municipal water supply initially derived from groundwater.[191]

Despite the many nuances of water doctrine—varying from east to west, from surface water to groundwater, and from common law to statutory modifications—core elements emerge. This Part identifies four such elements, including reasonable use, beneficial use and waste, preferred uses, and the public interest. Together, these concepts provide powerful, but generally overlooked,

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their property, regardless of the reasonableness of the use, and regardless of the harm thereby caused to others. *See, e.g.,* Acton v. Blundell, 152 Eng. Rep. 1223 (1843). Texas is thought to be the only state still following this rule. Sipriano v. Great Spring Waters of America, Inc., 1 S.W.3d 75, 81-82 n.14 (Tex. 1999).

[186] In its more modern form, the rule of capture is called the "American rule." *See, e.g.,* Sycamore Coal Co. v. Stanley, 166 S.W.2d 293, 294 (Ky. App. 1942) (describing American rule as "the sounder rule," under which "the right of a landowner to [the underlying groundwater] is limited to a reasonable and beneficial use of the waters under his land, and he has no right to waste them, whether through malice or indifference, if, by such waste, he injures a neighboring landowner").

[187] *See supra* notes.

[188] TARLOCK ET AL., *supra* note 111, at 549-50 ("As groundwater hydrology become a more precise science, and as the effects of groundwater use on others became more apparent, American states rejected the absolute ownership doctrine in favor of rules allowing 'reasonable use' or establishing correlative rights that allow all pumpers to share with one another.") The correlative rights doctrine (which is virtually identical to the surface doctrine of riparianism) requires landowners to share the underlying aquifer, often in proportion to the amount of land owned by each competing claimant. *See* also Katz v. Walkinshaw, (Cal. 1903) (reversed on other grounds) (restricting each water user, in times of shortage, to a "fair and just proportion" of the shared aquifer).

[189] TARLOCK ET AL., *supra* note 111, at 558. *See also* DAVID H. GETCHES, WATER LAW IN A NUTSHELL 252 (3rd ed. 1997) ("Allocation of rights in groundwater strictly based on prior use is not practical; a senior groundwater appropriator theoretically could demand that no pumping be allowed because virtually any new pumping causes some effect on existing wells").

[190] *See infra* Part I.A.

[191] *Id.*

tools to ensure that the allocation of water rights for bottling purposes keeps pace with evolving cultural norms leading away from the bottle and back to the tap.

1. Reasonable Use

The concept of reasonable use is ubiquitous in water law. Although the notion is relevant in several different contexts,[192] three basic features remain constant—the purpose of the use, the amount of use, and the place of use. First, courts look to the purpose of the use in isolation from all other uses—domestic use, power generation, manufacturing, recreation, and others—to determine if it has sufficient social utility to be deemed reasonable.[193] The nature of this inquiry necessarily evolves, reflecting the customs and practices of the time.[194] Next, courts look at the amount of use, making a correlative analysis that considers whether the challenged use is reasonable in comparison with all other competing uses.[195] As one court explained, "What is or constitutes . . . reasonable use must be determined in view of the size and capacity of the stream, the wants of all other proprietors, . . . the number of proprietors to be supplied, and all other circumstances."[196] Thus, a use that is adjudged reasonable today may be held unreasonable at some point in the future.[197] Finally, many jurisdictions consider the place of use, requiring that water be used on the same tract of land from which it was withdrawn (the "on-tract rule,"[198] or at least within the same watershed

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[192] *See infra* notes and accompanying text.

[193] Considerations relevant to this aspect of the reasonableness inquiry include, "a) the purpose of the use, b) the suitability of the use to the watercourse or lake, c) the economic value of the use, and d) the social value of the use." TARLOCK ET AL., *supra* note 111, at 134, setting forth the Restatement (Second) of Torts § 850A(a)-(d) (1979)

[194] *See, e.g.,* Snow v. Parsons, 28 Vt. 459 (1856) (asserting that "[a] uniform general custom . . . ought . . . to have a controlling force" in determining the reasonableness of a challenged use of a stream).

[195] Relevant considerations include, "the extent and amount of the harm [the use] causes, . . . the practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other, . . . the practicality of adjusting the quantity of water used by each proprietor, . . . [and] the protection for existing values of water uses, land, investments, and enterprises. . . ." TARLOCK ET AL., *supra* note 111, at 134, setting forth the Restatement (Second) of Torts § 850A(e)-(h) (1979).

[196] Kundel Farms v. Vir-Jo Farms, Inc., 467 N.W.2d 291 (Iowa 1991), *quoting* Willis v. City of Perry, 60 N.W. 727, 729 (1894).

[197] *See, e.g.,* Hoover v. Crane, 106 N.W.2d 563 (Mich. 1960) (declining to hold irrigator's use unreasonable under present circumstances, but keeping case open "for future petitions based on changed conditions" and noting that "at some point the [irrigation] use of the water which causes loss must yield to the common good").

[198] This rule limits water use to the same parcel of land from which it was withdrawn or diverted. *See, e.g.,* McBryde Sugar Co., Ltd. v. Robinson, 504 P.2d 1330 (Hawaii 1973) (holding that riparian water rights appertain only to land adjoining a natural watercourse for its use).

("the watershed rule").[199] These rules stem from the very nature of riparianism as "a form of property law that recognizes water rights as an attribute of ownership of land bordering a waterway."[200]

Applying these principles to the context of water bottling, in some cases it may prove to be unreasonable in terms of the purpose of use, the amount of use, or the place of use. With respect to purpose, at present it seems unlikely that courts would find extracting water for the purpose of bottling as *per se* unreasonable. The Michigan court of appeals, for example, held that "[t]he provision of [bottled] water to the general public is . . . an economically and socially beneficial use of . . . water," even though the court ultimately held unreasonable the bottler's usage of under the particular facts of the case.[201] However, if the anti-bottled water culture continues to gain force,[202] it is possible that at some point in the future bottled water will no longer be considered a reasonable use of a scarce resource.[203]

Second, if a particular bottling operation consumes an excessive amount of water under the circumstances, its usage could be enjoined as unreasonable. Particularly relevant to this inquiry is the fact that the "consumptive use"[204] of bottled water is one hundred percent. That is, when water is bottled for market distribution—throughout the region, state, or even the world—virtually none of the water finds its way back to the source. In comparison, municipal water

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[199] Under the watershed rule, the use of water outside the source watershed may be enjoined as *per se* unreasonable. *See, e.g.,* United States v. Fallbrook Public Utility Dist., 165 F.Supp. 806 (S.D. Cal. 1958). *But see* Stanton v. Trustees of St. Joseph's College, 254 A.2d 597 (Me. 1969) (declining to enjoin use outside the watershed in the absence of injury to riparian water users)

[200] TARLOCK ET AL., *supra* note 111, at 111.

[201] Michigan Citizens for Water Conservation v. Nestlé Waters North America Inc., 709 N.W.2d 174, 206 (Mich. App. 2006), *rev'd in part on other grounds,* 737 N.W.2d 447 (Mich. 2007) (holding that plaintiffs lacked standing to pursue some of their claims). In particular, the appellate court was impressed that the bottling plant "employed 140 persons" and that the "plant and equipment represent a significant investment in the community and are a source of tax revenue." 709 N.W.2d at 206.

[202] *See supra* Part III.C.

[203] *See supra* note (noting that reasonableness evolves in tandem with accepted social practice). *See In re* Town of Nottingham, 904 A.2d 582, 596 (N.H. 2006) (finding evidence sufficient to establish that USA Springs's proposed ground water withdrawal was desirable and useful, based in part upon data indicating "that there is a strong existing public demand for bottled drinking water in the United States" and that "the growth rate for consumer demand . . . will be nearly 12% annually in the years ahead").

[204] One state defines "consumptive use" as "that portion of the annual volume of water diverted under a water right that is transpired by growing vegetation, evaporated from soils, converted to nonrecoverable water vapor, *incorporated into products*, or otherwise does not return to the waters of the state." Idaho Code, § 42-202B (emphasis added).

supplies have a significantly lower consumptive use of about twenty-five percent because tap water unused in the home simply flows down the drain and returns to the municipal system.[205] After wastewater treatment, the water typically returns to its source through municipal outflow pipes or through groundwater recharge.[206]

Finally, the place of use might be unreasonable. That is, bottled water producers often locate their bottling plants some distance away from the water source. Under traditional water law principles, such uses are "nonriparian" because the actual place of use (the bottling facility) is not adjacent to a natural watercourse or directly above the groundwater aquifer. These nonriparian uses may be held unreasonable because they run afoul of longstanding doctrinal preferences that view water and land as an integral unit.[207] The Michigan Court of Appeals, for example, considered whether a water bottler's proposed use of groundwater was unreasonable when that water was used at bottling plant approximately twelve miles from the company's wells.[208] The court held that the proposed groundwater withdrawal was unreasonable under the circumstances, noting particularly that "in order to ensure that the needs of local water users are met first, water uses that benefit the riparian land or the land from which the groundwater was removed are given preference over water uses that ship the water away or otherwise benefit land unconnected with the location from which the water was extracted."[209]

The possibility that off-tract bottling facility may be unreasonable is consistent with the rules applying to municipal water providers, making it difficult and costly for nonriparian cities to provide water to their residents. Articulating a widely-shared rationale, one state court asserted that a "city purchasing land bordering on a stream, the natural watershed of which was beyond its corporate limits, could not divert water therefrom onto nonriparian land for its nonriparian

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[205] *See* United States Census, *U.S. Water Withdrawals and Consumptive Use Per Day, by End Use* (using 1980 data reporting that public supply consumes 7.1 billion gallons daily out of 34 billion gallons physically withdrawn from water sources).

[206] There is an imperfect correlation between the consumptive use of municipal water and the consumptive use of bottled water. Whereas bottled water is used primarily (if not exclusively) for drinking purposes, municipal tap water may be used for additional purposes, including lawn irrigation, cooking, cleaning, bathing, and sanitation.

[207] *See supra* notes and accompanying text.

[208] *Michigan Citizens for Water Conservation,* 709 N.W.2d at 185.

[209] *Id.* at 204. The court noted that the defendant was in a better position to mitigate harm by using alternative water sources. *Id.* at 207. The plaintiffs, in contrast, made recreational and aesthetic uses of the stream that required "a minimum level of water . . . which cannot be mitigated through changes in the manner of use." *Id. But see* Griswold v. Town of Denmark, 927 A.2d 410 (Me. 2007) (affirming permitting body's finding that because a natural water source was not available at Nestlé Water's bottling facility, denial of water use permit approving the off-site transport of water would create substantial hardship to the company).

inhabitants without compensating lower riparian owners."[210] Instead, governmental water providers must use their powers of eminent domain to compensate riparian landowners for any deprivation of their water rights.[211]

2. *Beneficial Use and Waste*

Beneficial use has been described as the "basis, measure, and limit" of water rights acquired under the prior appropriation doctrine, as applied to both surface water and groundwater.[212] Like its eastern counterpart, reasonable use, beneficial use encompasses both the purpose and volume of appropriation.[213] Also like its eastern counterpart, the notion of beneficial use evolves over time. As one court explained,

> The concept of what is or is not a beneficial use must necessarily change with changing conditions. [I]f we were now presented with a question of whether or not using water to operate a public swimming pool, a fountain, or to flood a tract to provide ice for a skating rink were beneficial uses, a good argument could be presented that such uses . . . were . . . beneficial. But we cannot say that such uses will always be beneficial . . . . because conditions might so change that these uses would be an unjustifiable use of water needed for other purposes.[214]

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[210] Sayles v. City of Mitchell, 245 N.W. 390 (S.D. 1932). *See also* Harrell v. City of Conway, 271 S.W.2d 924 (Ark. 1954); Town of Purcellville v. Potts, 19 S.E. 2d 700 (Va. 1942).

[211] U.S. v. Gerlach Live Stock Co., 339 U.S. 725, 752-53 (1950) ("No reason appears why those who get the waters should be spared from making whole those from whom they are taken. Public interest requires appropriation; it does not require expropriation."). *See also* Jeter v. Vinton-Roanoke Water Co., 76 S.E. 921, 926 (Va. 1913) (holding that the provision of a municipal water supplies is a "public use" for purposes of eminent domain).

[212] TARLOCK ET AL., *supra* note 111, at 177.

[213] As one court explained,

> *Beneficial use* is a term of art in water law, and encompasses two principal elements of a water right. First, it refers to the purposes, or types of activities, for which water may be used. . . . Second, beneficial use determines the measure of a water right. The owner of a water right is entitled to the amount of water necessary for the purpose to which it has been put, provided that purpose constitutes a beneficial use.

Washington Dep't of Ecology v. Grimes, 852 P.2d 1044 (Wash. 1993).

[214] Idaho Dep't of Parks v. Idaho Dep't of Water Administration, 530 P.2d 924 (Idaho 1974) (Bakes, J., concurring). *See also* GETCHES, *supra* note 189, at 97 ("Just because a use is among the types [recognized as beneficial], however, does not mean it will be deemed 'beneficial' under the circumstances or for all time. Indeed, yesterday's beneficial use may be unreasonable or wasteful, and thus impermissible, today.").

Increasingly, environmental preservation has been recognized as a beneficial use of water.[215]

Two important qualifications of "beneficial use" may have relevance in the context of bottled water. First, water must be used efficiently to achieve its "maximum utilization" by as many water users as possible.[216] Conversely, water must not be wasted under the "accepted, though oft violated, principle that the right to water does not give the right to waste it."[217] In some instances, the use of water for bottling purposes might promote inefficiencies that rise to the level of wasteful or non-beneficial use. In particular, if a bottler's water use can be demonstrated to interfere with a competing user's domestic water supply,[218] then it is possible the court would find bottled water as an inefficient and non-cost-effective alternative to tap water, particularly if the court considered that it takes approximately three quarts of water to produce one quart of bottled water.[219] As one court warned, "we cannot say that [current beneficial uses] will always be beneficial . . . because conditions might so change that these uses would be an unjustifiable use of water needed for other purposes."[220]

As a second limitation, water must not be hoarded for speculative purposes, perceived to be the very antithesis of beneficial use. In allocating scarce water supplies, some jurisdictions require that the appropriator clearly identify end user, rather than appropriating the public resource for free and then "speculating" that an opportunity for profitable re-sale will arise.[221] Even municipal water suppliers seeking to meet the present and future needs of their residents must demonstrate that their appropriations are correlated to "reasonably

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[215] *Idaho Dep't of Parks,* 530 P.2d at 924 (holding constitutional statutory provision declaring instream use of water for scenic beauty and recreation as beneficial use). *See also* Christine A. Klein, *The Constitutional Mythology of Western Water Law*, 14 VIRGINIA ENVTL. L. J. 343, 348-52 (explaining how concept of waste has evolved from idea that leaving unused water in a natural stream was non-beneficial and wasteful, to modern view that keeping water in a stream for recreational and scenic purposes is a beneficial use).

[216] Fellhauer v. People, 447 P.2d 986, 994 (Colo. 1968).

[217] *Id.*

[218] *See supra* notes and accompanying text.

[219] Azios, *supra* note 131, at 130; Howard, *supra* note 13 (asserting that in "filtration, an estimated two gallons of water is wasted for every gallon purified").

[220] *Idaho Dep't of Parks,* 530 P.2d at 924 (Bakes, J., concurring). *See also* Imperial Irrigation Dist. v. State Water Resources Control Board, 275 Cal. Rptr. 250 (Cal. App. 1990) (upholding requirement that irrigation district update its inefficient distribution system).

[221] *See, e.g.,* High Plains A&M LLC v. Southeastern Colorado Water Conservancy District, 120 P.3d 710 (Colo. 2005) (affirming water court's finding that application for change of water right was so expansive and nebulous as to violate state's anti-speculation doctrine).

anticipated requirements based on substantiated projections of future growth."[222] Private water suppliers face even more stringent requirements, and must demonstrate firm contractual commitments with end users as a prerequisite to the acquisition of water rights.[223] For example, in Colorado River Water Conservation District v. Vidler Tunnel Water Company, the Colorado Supreme Court approved the denial of a water right to a private water company planning to store water in a reservoir, transfer it across a mountain range, and then sell it to municipalities for municipal purposes.

In reasoning potentially applicable to water bottlers, the *Vidler* court found the plan to be speculative and lacking the necessary intent to apply the appropriated water to beneficial use because it "essentially depended on an unsubstantiated assumption that general population growth would produce a need for more water in the future and that municipalities would seek to satisfy this need from [the appellant's] supply."[224] Currently, it is likely that bottlers—with potential customers worldwide—could easily satisfy the *Vidler* requirements. Furthermore, to date the pejorative connotation of "speculation" has been limited to the mischief of hoarding the state's water without *use,* rather than hoarding the state's water for future *economic profit.*[225] Nevertheless, if water supplies grow scarcer and the anti-privatization norm grows stronger,[226] the anti-speculation doctrine could evolve as a potential mechanism for reconciling legal doctrine with social norms.

3. *Preferred Uses*

To date, bottled water has been given little statutory or judicial attention, with the exception of a few legislative enactments that give bottled water preferential treatment. For example, Florida specifically exempts bottled water from the statutory "local sources first" directive that "encourage[s] the use of water, whenever practicable, from sources nearest the area of use or

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[222] *See, e.g.,* City of Thornton v. Bijou Irrigation Co., 926 P.2d 1 (1996) ("a municipality may be decreed conditional water rights based solely on its projected future needs, and without firm contractual commitments or agency relationships, but a municipality's entitlement to such a decree is subject to the water court's determination that the amount conditionally appropriated is consistent with the municipality's reasonably anticipated requirements based on substantiated projections of future growth.")

[223] *See* Vidler Tunnel Water Co., 594 P.2d 566 (Colo. 1979).

[224] City of Thornton v. Bijou Irrigation Co., 926 P.2d 1 (Colo. 1996) (distinguishing *Vidler*). *See also Central Delta Water Agency v. State Water Resources Control Board,* 20 Cal. Rptr. 3d 898 (Ct. App. 2004) (setting aside water permits where private entity sought a water right for storage of water, relying upon a general demand for water in California, rather than specific buyers).

[225] *See* OXFORD ENGLISH DICTIONARY (rev. 10th ed.) (defining "speculate" as ""invest in stocks, property, or other ventures in the hope of gain but with the risk of loss").

[226] *See supra* Part III.C.3.

application."[227] Notably, these informal preferences have little to do with the "preferences" recognized as a term of art under traditional water law principles. As such, they can best be explained as *sui generis* provisions motivated by political, rather than legal, calculations. However, if social norms continue to evolve in opposition to bottled water, then it is likely that such provisions may not survive.

The concept of preferred uses co-evolved with the doctrine of reasonableness under the riparian system and with the doctrine of beneficial use under the prior appropriation system. When there is not enough water to satisfy all needs, preferred uses enjoy an advantage over non-preferred uses, even if this allocation runs counter to the priority system.[228] Utah, for example, modifies its appropriation doctrine such that "in times of scarcity, while priority of appropriation shall give the better right as between those using water for the same purpose, the use for domestic purposes, without unnecessary waste, shall have preference over use for all other purposes, and use for agricultural purposes shall have preference over use for any other purpose except domestic use."[229] Like the Utah legislation, most preference statutes protect domestic or "natural uses," including household purposes such as drinking, cleaning, washing, and cooking.[230] In contrast, artificial uses—those that "merely increase one's comfort and prosperity and do not rank as essential to [one's] existence"—must compete with one another on the basis of their comparative reasonableness.[231]

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[227] Fla. Stat. § 373.016(4)(a) (2007). *See also* Ark. Code § 15-22-905(6) (2007) (specifically exempting marketers of bottled water and public water supply systems from restrictions on the place of uses of groundwater); Colo. Rev. Stat. § 37-81-103(3) (exempting "water contained in . . . bottles" from apportionment credit provision otherwise applicable to out-of-state diversions).; Fla. Stat. § 373.223(3) (exempting bottled water from a public interest test that considers, *inter alia,* "economically and technically feasible alternatives" to the proposed water source, and the "potential environmental impacts that may result from the transport and use of the proposed source"); Okla. Stat. § 1B(C)(2) (2007) (exempting "[w]ater contained in agricultural crops, . . . beverages, [and] products transported in . . . bottles" from moratorium on sale or exportation of water outside the state).

[228] *See, e.g.,* Colorado Const. art. XVI, § 6; Ga. Code § 12-5-31(l)(3) (2007); Kansas Statute No. 82a-707(b); Md. Nat. Res. Code § 8-807. *See also* Harris v. Brooks, 283 S.W.2d 129(Ark.1955).

[229] Utah Code 1953 § 73-3-21 (2007).

[230] Michigan Citizens for Water Conservation v. Nestlé Waters North America, Inc., 709 N.W.2d 174, 185, 204 (Mich. App. 2006), *rev'd in part on other grounds,* 737 N.W.2d 447 (Mich. 2007). *See also* Kundel Farms v. Vir-Jo Farms, Inc. 467 N.W. 2d 291 (Ct. App. Mo. 1991); Thompson v. Enz, 154 N.W.2d 473, 484 (Mich. 1967).

[231] *Thomspon,* 154 N.W. 2d at 484. Natural and artificial uses may also be distinguished on the basis of the volume of water needed, giving preference to the use of small quantities of water that create little interference with the watercourse. *See* Meng v. Coffey, 93 N.W. 713, 717-18 (1903).

Water bottling likely qualifies as a non-preferred artificial use.[232] Although water is absolutely necessary for the existence of humans, water bottling is for the purpose of commercial profit, which courts routinely classify as an artificial use.[233] For example, the Michigan Court of Appeals determined not only that water bottling is an artificial use, but also that its preference ranked behind other artificial uses such as recreation and aesthetics.[234] The court emphasized that, "water uses that benefit the riparian land or the land from which the groundwater was removed are given preference over water uses that ship the water away or otherwise benefit land unconnected with the location from which the water was extracted."[235] Under the circumstances, the court concluded that the proposed bottling operation would be unreasonable.[236]

4. The Public Interest

In many states, the common law doctrines of riparianism, prior appropriation, and groundwater usage have been replaced or supplemented by modern statutory codes.[237] Often these statutes rely upon broad "public interest" criteria that evolve as cultures and customs change. Environmental harms are increasingly relevant to the public interest evaluation.[238] In Florida, for example, applicants for consumptive use permits must demonstrate, among other things, that "the proposed use is consistent with the public interest," including consideration of the impacts of the proposed consumptive use on the natural environment, the potential for saltwater intrusion into underground aquifers, and whether the proposed use will cause stream flows or aquifers levels to fall below

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[232] *See*, *e.g.,* Fla. Stat. § 373.019(4) (2007).

[233] *See, e.g., Thompson*, 154 N.W2d at 483 (classifying water use for "commercial profit" and "recreation" as artificial uses).

[234] *Michigan Citizens for Water Conservation*, *supra* at 205-06.

[235] *Id.*

[236] *Id.*

[237] *See, e.g.,* Florida Water Resources Act of 1972, Fla. Stat. Chap. 373 (2007).

[238] For example, Washington law provides,

> The quality of the natural environment shall be protected and, where possible, enhanced as follows: (a) Perennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic, and other environmental values, and navigational values. Lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in those situations where it is clear that overriding considerations of the public interest will be served.

Washington Code § 90.54.020(3).

certain designated minimum values.[239] The public interest requirement may be imposed judicially, as well as legislatively. The Idaho Supreme Court, for example, identified several public interest requirements for water use, including the effect of the proposed use on fish and game resources and minimum stream flows, and whether the proposed use discourages waste and encourages conservation.[240]

The production and consumption of bottled water generates numerous adverse environmental consequences that may run afoul of public interest requirements. Although water bottlers may use a relatively modest share of the water consumed by the entire manufacturing and food industries, they have the potential to cause significant localized reductions in stream flow and aquifer levels. In Michigan, for example, a proposed bottling facility would have allocated almost twenty-five percent of stream flows to the bottler, causing serious deterioration of the aquatic ecosystem.[241] Moreover, the distribution of bottled water from remote sources to consumers worldwide pollutes the atmosphere with emissions from delivery vehicles.[242] In addition, the production and disposal of plastic bottles generates additional pollution.[243] These various environmental harms are particular noteworthy because a virtually identical product is available—tap water—at a fraction of the economic and environmental cost. Importantly, some have begun to call for an expansion of the public interest inquiry, accounting for the secondary impacts of proposed water usage, as well as a temporally and geographically expansive view of what constitutes the "public."[244] These areas are particularly salient in the discussion about bottled water, accounting for the long-term impacts caused by the plastic bottle manufacturing and disposal as well as its transport to distant markets.

Less tangible social impacts may also be relevant to the public interest. For a growing number of people, the idea of water resonates at a purely visceral

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[239] Fla. Stat. § 373.223(1) (2007).

[240] Shokal v. Dunn, 707 P.2d 441, 449 (Id. 1985) (noting that list of public interest factors was not comprehensive and that the "public interest" should be read expansively "in order to secure the greatest possible benefit from public waters for the public"). *See also* Michigan Citizens for Water Conservation v. Nestlé Waters North America Inc., 709 N.W.2d 174, 185, 204 (Mich. App. 2006), *rev'd in part on other grounds,* 737 N.W.2d 447 (Mich. 2007) ("In assessing the harm and benefits, the court should also examine the social benefits and costs of the use, such as its effect on fishing, navigation, and conservation."), *quoting* Thompson v. Enz, 154 N.W.2d 473 (Mich.1967).

[241] *Michigan Citizens for Water Conservation*, 709 N.W.2d *at* 185, 204 (anticipating a 24% reduction of stream flow).

[242] *See supra* Part II.B.1.c.

[243] *Id.*

[244] Douglas L. Grant, *Two Models of Public Interest Review of Water Allocation in the West*, 9 U. DEN. WATER L. REV. 485, 511-16 (2006).

level. News of a proposed bottling plant immediately generates petitions, town-hall meetings, and vigorous opposition to the "export" of local water supplies to distant consumers.[245] If these protests represent mere parochial protectionism, they may have little relevance to the public interest analysis. Alternatively, these protests may provide a valuable "guide to what the community considers reasonable," a factor relevant to the public interest analysis.[246]

CONCLUSION

Bottled water poses a unique set of regulatory concerns, challenging state administrators to think broadly about whether bottling constitutes a "reasonable" or "beneficial" use of water under traditional state law principles.[247] Unlike many other products that incorporate water—from a baby food jar of stewed prunes to a bottle of beer—only bottled water displaces the public water distribution system meticulously engineered across the nation. Among such water-based products, only bottled water has a virtually identical substitute available at only a fraction of the economic, social, and environmental cost—tap water.

As water becomes an increasingly scarce and precious resource worldwide, we hope that water administrators will consider our suggestions to minimize the inefficient use of water, oil, and landfill capacity associated with the production and consumption of bottled water.[248] Admittedly, curtailing the excesses of the bottled water culture represents only a small step toward increasing the sustainability of our water resources. But it is a good place to start, as evolving cultural norms pave the way for legal reform.

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[245] Christine A. Klein, *The Law of the Lakes*, Mich. State L. Rev. 1, 2 (2006).

[246] *Michigan Citizens for Water Conservation*, 709 N.W.2d *at* 205 ("The traditional use employed in the locality where the resource resides will often be a guide to what the community considers reasonable in this context.").

[247] *See supra* Parts IV.B.1 and IV.B.2.

[248] *See supra* Part II.C.2.