

**“BOTTLING UP” OUR NATURAL RESOURCES: THE
FIGHT OVER BOTTLED WATER EXTRACTION IN
THE UNITED STATES**

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I. INTRODUCTION

Only 1% of the existing water resources on the entire planet can be used for human consumption. The remaining 99% of the existing water resources consist of 97% saltwater and 2% ice caps.¹ These figures become even more critical when it is estimated that the world's population recently exceeded 6 billion people, and 7% of those people lack the daily water resources needed to merely survive.² In fact, the World Health Organization asserts that "the lack of drinking water is the leading cause of mortality in the world today."³ Water is also necessary for the survival of plants, animals, and most industries, especially the agricultural industry. Therefore, the availability of water for drinking and irrigation is the top priority of many local and world leaders. Leaders recognize that the limited fresh water supply must be maintained to satisfy the thirsts of those living today and those to come in future generations.

Recent concerns about the contamination of municipal tap water and the popularity of the fitness-focused lifestyle have led to an explosion in the sales of purified bottled water throughout the world. While bottled water used to be the beverage of only the wealthy, it is now today's drink of choice of both the health-conscious and average consumer. In the United States alone, consumers drank five billion gallons of bottled water in 2001.⁴ This is about the same amount of water that falls in two hours from the American Falls at Niagra Falls.⁵ With the boom in the bottled water industry, bottlers are looking for new sources from which to pump their product. This has sparked a debate over the amount of

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1. Bottled Water Web, *Facts*, at <http://www.bottledwaterweb.com/indus.html> (last visited Feb. 25, 2003).

2. Christopher Scott Maravilla, *The Canadian Bulk Water Moratorium and its Implications for NAFTA*, CURRENTS: INT'L TRADE L.J., Summer 2001, at 29.

3. Nestlé Waters, *Leaving a Legacy of Healthy Water for the Future*, at http://www.nestle-water.com/english/d-1-a_une_ressource.asp (last visited Feb. 25, 2003).

4. Anne Christiansen Bullers, *Bottled Water: Better Than The Tap?*, FDA CONSUMER MAG., July-Aug. 2002, at http://www.fda.gov/fdac/features/2002/402_h2o.html (last visited Feb. 25, 2003).

5. *Id.*

water that can legally be withdrawn from local bodies of water and sold across the country.⁶

The issue presented by this Note is whether states need to develop stricter laws to protect the quantity of their fresh water resources from the expansion of the bottled water industry. While regulation currently exists on the federal level as to the quality of bottled water, it is up to the states to place regulations on the *quantity* of water that can be extracted from the fresh water resources within their boundaries. States must be concerned with the maintenance of their local water supplies in order to sustain their population, their industry, their farms, their recreational areas, and their natural environment. However, state restrictions on pumping quantities of bottled water conflict with private property owners' rights to use their property as they see fit, including the use of those natural resources, like water, found on or under their property. Private landowners and third party vendors of bottled water argue that their pumping does not adversely affect the water supply or the environment. They also claim that they would halt water extractions if there were adverse effects because they too have an interest in the persistence of the water source.

This Note explores the expansion of the bottled water industry in the United States, the effects of the industry on fresh water resources and their environments, and the legal battles to control the location and the amount of water collected by bottlers. With a recent boom in the demand for purified bottled water, the bottlers are searching for new untapped water sources in states such as Wisconsin, Michigan, Florida, and Texas. However, private citizen activist groups oppose the draining of their water sources by the bottlers, and they fear for the depletion or the contamination of their local water sources and the environment. Citizen activist groups are now pushing legislators to create stricter water protection laws, while bottled water companies continue to tempt local community leaders with tax dollars and new jobs for the area with their bottling facilities. In Crystal Springs, Florida, a legal battle emerged against a proposed increase in the amount of water that Zephyrhills, a Nestlé subsidiary, may collect from a spring feeding the Hillsborough River and, ultimately, the City of Tampa.

Part II examines the background of the bottled water industry and the history of regulations on bottled water in the United States. Sales in the bottled water industry have exploded since the 1990s.

6. See generally MAUDE BARLOW & TONY CLARKE, *BLUE GOLD: THE FIGHT TO STOP THE CORPORATE THEFT OF THE WORLD'S WATER* (2002); ROBERT GLENNON, *WATER FOLLIES: GROUNDWATER PUMPING AND THE FATE OF AMERICA'S FRESH WATERS* (2002).

In 1990, bottlers sold \$2.7 billion to thirsty consumers,⁷ while in 2001, sales rose to \$6.5 billion, according to the Beverage Marketing Corporation of New York.⁸ The average consumer in the United States in 2001 also drank five times the amount of bottled water as he or she did in 1984.⁹ The leading bottler of water in the world is Nestlé,¹⁰ but soft drink manufacturers, like Pepsi and Coca-Cola, have also tapped into the booming market with their own brands of bottled water.¹¹ Most bottlers sell water pumped from springs and wells; however, one-quarter of bottlers simply resell purified water from municipal water systems.¹²

Bottled water is regulated by the U.S. Food and Drug Administration (FDA) as a food product.¹³ Bottlers must therefore comply with the FDA's requirements on quality, labeling, and manufacturing practices. Bottlers must also comply with state restrictions on the collection of water and standards for bottled water, as well as trade industry regulations, like the Model Code of the International Bottled Water Association (IBWA). While regulation on the quality of bottled water has been adequately implemented as the market for water has expanded, regulations on the quantity that can be withdrawn from fresh water sources has not.

Part III explores the potential for environmental damage as a result of pumping large quantities of water from limited fresh water resources. Because of the tremendous market for bottled water, bottlers are looking for untapped resources from which to pump their product. Bottlers may seek out private landowners who will then seek a permit from local authorities to pump water from the ground to be transported to the bottling plant. Local citizens have become concerned with the large amount of water being removed from the local aquifer, and they fear for the persistence of their water supply and for the maintenance of the often pristine

7. Francis X. Donnelly, *Bottled Water Fight Grows*, DET. NEWS, May 20, 2001, at <http://www.detnews.com/2001/business/0105/20/b01-226110.htm> (last visited Feb. 25, 2003).

8. R.J. DeLuke, *Bottled Water Market Growing in Leaps and Bounds*, WATER TECH. MAG., July 2002, at <http://www.watertechonline.com/article.asp?indexid=6632855> (last visited Feb. 25, 2003).

9. See *id.*; Victor Lambert, *Bottled Water: New Trends, New Rules*, FDA CONSUMER, June 1993, at 9.

10. See Catherine Ferrier, *Bottled Water: Understanding a Social Phenomenon*, Apr. 2001, at 11, at http://archive.panda.org/livingwaters/pubs/bottled_water.pdf (last visited Feb. 25, 2003).

11. See Catherine Golub, *Liquid Assets: Is Bottled Water Really Better Than What's on Tap?*, ENVTL. NUTRITION, Sept. 2001, at 1.

12. See Natural Resources Defense Council, *Bottled Water: Pure Drink or Pure Hype?*, at <http://www.nrdc.org/water/drinking/nbw.asp> (last visited Feb. 25, 2003).

13. See Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §§ 301-397 (2000).

environments. There is also concern for plant and animal species that thrive on the fresh water source and for the effects of the millions of tons of plastic that are used in the bottling of water. Therefore, the regulations on the quantity of water that can be extracted from fresh water resources must also reflect the environmental problems created by the extraction process.

Part IV examines the recent legal and statutory challenges to the expansion of the bottled water industry across the nation. Bottlers faced prominent legal challenges in Michigan, Texas, and Wisconsin, over their plans to establish pumping facilities on local water sources. In Michigan, three Native American tribes filed a lawsuit in federal court to prevent the extraction of water from the Great Lakes Basin.¹⁴ In Texas, a landowner filed suit against a bottler after his well dried up soon after the bottler began to pump water from a nearby property.¹⁵ Legislators in Texas have also responded to concerns over the extraction of water from their already depleted resources.¹⁶ In Wisconsin, a Native American tribe and two citizen activist groups waged legal battles against a bottler proposing to drill two large wells from which to pump large quantities of water each day.¹⁷ Finally, in Canada, a moratorium on bulk extraction and exportation of bottled water from its plentiful resources has halted the plans of U.S. and Canadian bottlers.¹⁸ Until states can enact stricter legislation on the bulk extraction of water for bottling, the industry will continue to face challenges from local citizens, and the bottler is likely to succeed under the current lax regulations.

Part V explains a specific legal challenge in Crystal Springs, Florida, over the rights to extract water from a natural spring which supplies water to the City of Tampa. A private landowner, Robert Thomas, owns the springs, which were once a popular recreation area for local families and visitors to the area. Thomas contracted with Zephyrhills, a subsidiary of Nestlé, in 1989 to pump water from the springs, and later closed the springs to the public.¹⁹ This angered local citizens and sparked concern for the well levels in the area and for the water from the springs which feeds into the

14. Joan Lowy, *Water Wars Pit Bottlers vs. Residents*, GRAND RAPIDS PRESS, Mar. 31, 2002, at A1, available at 2002 WL 4769952.

15. See generally *Sipriano v. Great Spring Waters of America, Inc.*, 1 S.W.3d 75 (Tex. 1999).

16. See Act of June 1, 1997, ch. 1010, 1997 Tex. Gen. Laws 3610, available at <http://www.capitol.state.tx.us/tlo/75R/billtext/SB00001F.HTM> (last visited Feb. 25, 2003).

17. *Ho-Chunk Sue DNR Over Perrier Drilling*, MILWAUKEE J. SENTINEL, Oct. 21, 2000, at <http://www.jsonline.com/news/state/oct00/stabrfs21102000a.asp> (last visited Feb. 25, 2003).

18. See Maravilla, *supra* note 2.

19. Save our Springs, Inc., *Crystal Springs History*, at <http://www.saveourspringsinc.org/history.htm> (last visited Feb. 25, 2003).

Hillsborough River and, ultimately, to the City of Tampa. When Thomas sought to increase his pumping limit in 1997, the local residents mounted a campaign against him.²⁰ In the end, Florida's regulations on water extractions, implemented by the local water district, were able to prevent the harms to the river and the threatened water supply.

Finally, part VI examines the possible options for state legislatures to consider when they act to preserve and protect the public and private water sources within their borders. I propose that states re-classify ground water resources within their borders as public resources, rather than commodities that can be bought and sold with no consequences to the state's water supply and environment. States should also restrict bulk extractions of water by developing stricter permitting requirements and enforcement agencies, and by providing relief to those adversely affected by commercial bulk water extractions. In addition, states should adapt water quantity regulations to consider the cumulative effects of bulk water extraction, encourage bottlers to explore desalinization processes to transform salt water into drinking water, and require consumers to pay for some of the costs created by the high demand for bottled water.

II. THE BOTTLED WATER INDUSTRY AND THE REGULATION OF THE INDUSTRY IN THE UNITED STATES

In the last two decades, the bottled water industry has grown beyond the expectations of consumers and those in the beverage industry itself. Today, consumers in all segments of the population drink water on a daily basis for many different reasons. As a result, sales figures are expected to continue to rise, and bottlers must expand their searches to new fresh water sources from which to extract their product.

In addition, the legal and environmental concerns based on the bulk extraction of fresh water resources are the result of laws which only regulate the quality of bottled water, rather than the *quantity* of water that is actually removed from the natural resources. While bottled water has historically been placed within the bounds of state authority, federal laws preempt all individual state laws when bottled water is sold across state lines or is imported into the United States.²¹

20. See Susan M. Green, *Smell of Dead Fish Punctuates Water Pumping Debate*, TAMPA TRIB., Apr. 15, 1997, at 4.

21. TECHNOLOGY OF BOTTLED WATER 53, 55 (Dorothy A.G. Senior & Philip R. Ashurst eds., 1998).

A. Sales of Bottled Water

Sales of bottled water have reached astounding figures in the last decade. The industry estimates suggest that sales of bottled water have tripled in the past ten years.²² Both sales and consumption of bottled water by the general public have surprised the leaders in the beverage marketplace. In 2001 alone, more than 5.4 billion gallons of bottled water were sold to and consumed by the American public.²³ Estimates also suggest that by 2004 bottled water will surpass milk and coffee to take its place as the second largest beverage sold after soft drinks.²⁴ In fact, by 2005, sales of bottled water are expected to exceed 7.2 billion gallons.²⁵

1. Amount of Bottled Water Consumed Versus the Cost of Production

The enormous sales figures from the bottled water industry also suggest great profits for leading sellers. Production costs of bottled water are estimated to be “as little as \$.0125 ... [to] \$.06 per gallon ... [t]hough it often sells for just over a dollar a bottle,” sized far smaller than a gallon.²⁶ Commentators on the boom of the bottled water industry proclaim that bottled water costs several times that of a gallon of gasoline, or almost \$8 per gallon.²⁷ “It is more expensive than milk, per fluid ounce, and about the same as coffee, soft drinks, and most fruit juices.”²⁸ In comparison to the price of municipal tap water, a report by the Natural Resources Defense Council (NRDC) stated that consumers spend “from 240 to over 10,000 times more per gallon for bottled water.”²⁹

2. Who Isn't Buying Bottled Water

In 1984, the level of annual per capita consumption of bottled water in the United States was only four gallons.³⁰ In 1991, that level rose to 9.3 gallons,³¹ and by 2001, the level of annual per capita

22. *Is Bottled Water Better?*, ENV'T, May 2001, at 4.

23. DeLuke, *supra* note 8.

24. See Lowy, *supra* note 14; Lisa Turner, *Toxins on Top? Why Bottles and Purifiers Really Hold Water*, BETTER NUTRITION, Dec. 2001, at 48.

25. *As Bottled Water Sales Rise, So Does Opposition to Plants*, WATER TECH. MAG., Mar. 2002, at http://www.waternet.com/news.asp?mode=4&n_ID=30517 (last visited Feb. 25, 2003).

26. See Jerry Gabriel, *Water for Sale: Why are We Paying Four Times What We Pay for Gasoline for Something That's Practically Free?*, HUM. ECOLOGY, Dec. 2001, at 8.

27. *Id.*

28. *Id.*

29. Natural Resources Defense Council, *supra* note 12.

30. Lambert, *supra* note 9, at 9.

31. DeLuke, *supra* note 8.

consumption rose dramatically to reach 18.2 gallons.³² Bottled water consumption is also increasing among all segments of the population, not simply the health-conscious portion. Today, almost fifty percent of Americans drink bottled water on an average day.³³ Consumers in California alone drink one-quarter of the bottled water supply sold in the United States.³⁴ The main reason for the population's choice of bottled water over tap water is taste, followed by a belief that bottled water is cleaner and healthier than tap water.³⁵ Many consumers of bottled water are concerned about the safety and quality of municipal water sources after recent health scares such as that in Milwaukee, Wisconsin, in 1993.³⁶ Other reasons for preferring bottled water over tap water include the fact that it is a "calorie-free, caffeine-free, and alcohol-free" alternative beverage, that it is sold in easy single serving containers,³⁷ and that it makes a "certain fashion statement" about the consumer.³⁸

3. *The Sources of Bottled Water and the Bottlers Themselves*

The source of 75% of bottled water sold in the United States today is a protected spring source or a well. The remaining 25% of water sold in bottles is collected from municipal tap water systems and purified.³⁹ Soft drink giant Pepsi holds the title as the number-one seller of bottled water at retail stores with its line of purified municipal tap water, Aquafina.⁴⁰ Its rival, Coca-Cola, also sells purified municipal tap water under its brand, Dasani.⁴¹ Over 700 different brands of bottled water appeared on the shelves of stores in the United States in 1992.⁴² The top sellers of bottled water in the American marketplace include Nestlé/Perrier Group of America, Danone Waters of North America, Pepsi, and Coca-Cola.⁴³ Nestlé/Perrier Group of America dominates in the world market with almost 16% of all bottled water sales, and 67 bottling plants

32. See Gabriel, *supra* note 26, at 9.

33. See DeLuke, *supra* note 8.

34. Gabriel, *supra* note 26, at 9.

35. See Lambert, *supra* note 9, at 9.

36. See Golub, *supra* note 11 (discussing the Cryptosporidium outbreak in the municipal water supply which infected over 400,000 people).

37. Sharon Denny, *Why Bottled Water?*, CURRENT HEALTH 2, Oct. 1996, at 26.

38. Gabriel, *supra* note 26, at 9.

39. See "Water, Water, Everywhere" ... *But Is It Safe to Drink?*, MED. UPDATE, Nov. 1993, at 5.

40. "Purified" Bottled Water *From Public Water Supplies*, TUFTS U. HEALTH & NUTRITION LETTER, Mar. 2000, at 1.

41. *Id.*

42. See Ferrier, *supra* note 10, at 10.

43. See DeLuke, *supra* note 8.

that employ 18,000 people around the world.⁴⁴ It collects water from 75 springs in the United States for 15 brands of bottled water like Ice Mountain, Deer Park, Zephyrhills, Poland Springs, and Ozarka.⁴⁵

B. The Regulation of Bottled Water

1. Federal Regulations

The quality of bottled water is regulated by the federal government. Bottled water is regulated by the Food and Drug Administration (FDA) because it is classified as a food product under the Federal Food, Drug and Cosmetic Act (FFD&C Act).⁴⁶ All other water supplies for drinking water are regulated by the Federal Environmental Protection Agency (EPA).⁴⁷ However, the FDA is “responsible for ensuring that the quality standards for bottled water are compatible with EPA standards for quality and safety of tap water.”⁴⁸ The Hammer Provision of 1996 further establishes that when the EPA changes or adds to its contamination standards, the FDA must also set a similar level for bottled water or report in the Federal Register why it is not doing so.⁴⁹ Therefore, the quality standards for bottled water set by the FDA must be at least as stringent as those issued by the EPA for municipal tap water.

In 1995, the FDA established standard of identity regulations for bottled water.⁵⁰ The standard of identity regulations describe the different types of bottled water. For instance, the FDA describes “spring water” as follows:

water derived from an underground formation from which water flows naturally to the surface of the earth . . . [which] shall be collected only at the spring or through a bore hole tapping the underground formation feeding the spring If spring water is collected with the use of an external force, [the] water must continue to flow naturally to the surface of the earth through the spring’s natural orifice.⁵¹

44. See Ferrier, *supra* note 10, at 11.

45. See also Donnelly, *supra* note 7.

46. See 21 U.S.C. §§ 301-321(f) (2000).

47. See Safe Drinking Water Act, 42 U.S.C. § 300(f) (1974), amended by Pub. L. No. 104-182, 110 Stat. 1613 (1996).

48. Lambert, *supra* note 9, at 9.

49. See 21 U.S.C. § 349 (2000).

50. See 21 C.F.R. § 165.110(a) (2002).

51. *Id.* § 165.110(a)(2)(vi).

Furthermore, the FDA requires that bottled water be labeled appropriately with its type in order to fall within the standard of identity or it will be deemed misbranded.

The FDA also requires water bottlers to follow its standards of quality⁵² and its current good manufacturing practices (CGMP) regulations.⁵³ The standards of quality establish “limits for microbiological, physical, chemical, and radiological substances for both source water and finished bottled water products.”⁵⁴ The CGMP regulations allow for the inspection of bottling facilities to review plant construction and design, bottled water production and process controls, and to ensure the sanitary operation of bottling plants.⁵⁵

2. State Regulations

Water that is bottled and sold within the same state is not subject to federal regulations. The NRDC estimates that “between 60 and 70 percent of all bottled water sold in the United States” falls into this category that is not federally regulated.⁵⁶ States often use one of three models for their regulations on the quality of bottled water. First, under the Federal/FDA Model, bottled water is classified as a food product and must satisfy only the FDA’s food safety and labeling requirements.⁵⁷ State requirements as to labeling and/or quality standards may also apply to intrastate bottled water under this model.⁵⁸ Second, the Environmental Model regulates bottled water through the state’s environmental protection agency or natural resources department.⁵⁹ While this model is only followed by six states, regulation “begins at the source of withdrawal and usually includes inspection, sampling, analysis and approval of water sources.”⁶⁰ Finally, the Combination Model incorporates regulations from both the Federal/FDA and the Environmental Models.⁶¹ The environmental or natural resources

52. *See id.* § 165.110(b).

53. *See id.* § 129.1.

54. International Bottled Water Association, *Regulation of Bottled Water: An Overview*, at <http://www.bottledwater.org/public/Bottled%20Water%20Regulation%20Overview.htm> (last visited Feb. 25, 2003) [hereinafter IBWA, *Overview*].

55. *Id.*

56. National Resources Defense Council, *supra* note 12.

57. IBWA, *Overview*, *supra* note 54.

58. *Id.*

59. *Id.*

60. *Id.*

61. *Id.*

agency regulates the source withdrawal of the water, and once bottled, the water is regulated as a food product.⁶²

States are also primarily responsible for permitting for the extraction of bottled water from the natural resources within their borders. Many states have enacted legislation which grants the authority to regulate water consumption in the state to the environmental or natural resources agency, which may choose to further delegate authority to local water boards. These water boards often establish plans for the use of the water and the preservation of the sources within their jurisdiction. The boards also issue permits for water uses which comply with state law and are approved by the board itself. For example, in Florida, the legislature granted the authority and responsibility to the Department of Environmental Protection (DEP) in order to “accomplish the conservation, protection, management, and control of the waters of the state and with sufficient flexibility and discretion to accomplish these ends through delegation of appropriate powers to the various water management districts.”⁶³ Florida’s Administrative Code also guides water management districts in establishing their permitting rules.⁶⁴

3. Trade Industry Regulation

The bottled water industry also has its own self-regulating body, the International Bottled Water Association (IBWA). IBWA was established in 1958,⁶⁵ and maintains standards for its members that are often stricter than federal and state regulations on bottled water.⁶⁶ IBWA reports that its Model Code has been adopted by at least sixteen states, including California, Florida, and Texas, mainly to act as a basis for their inspection programs for bottled water facilities.⁶⁷ IBWA has approximately 1,000 members who produce 85% of the bottled water sold in the United States.⁶⁸ Each member bottler of IBWA is required to pass a yearly unannounced inspection of its bottling facilities by the National Sanitation Foundation (NSF), an independent certifying agency.⁶⁹ “In order to maintain

62. *Id.*

63. FLA. STAT. § 373.016(5) (2002).

64. *See generally* FLA. ADMIN. CODE R. 62-40.410 (1995).

65. TECHNOLOGY OF BOTTLED WATER, *supra* note 21, at 205.

66. *See* Golub, *supra* note 11.

67. International Bottled Water Association, *Model Bottled Water Regulation*, January 2002, at 23, at <http://www.bottledwater.org/public/2002ModelCode0102.pdf> (last visited Feb. 25, 2003).

68. Elizabeth Ward, *Safe Drinking Water: Is Bottled Water Really Better?*, ENVTL. NUTRITION, Oct. 1994, at 1.

69. TECHNOLOGY OF BOTTLED WATER, *supra* note 21, at 205.

NSF certification, water bottlers must send daily samples to an independent lab for microbiological testing and must maintain records of filter changes and other quality checks.”⁷⁰ IBWA also requires its bottler members to create a Hazard Analysis and Critical Control Points (HACCP) program to ensure “food safety and security within the production facility.”⁷¹

4. Bottlers' Water Policies

Individual bottlers may also choose to establish their own water policies, which may address broader concerns about the responsible management of water resources. Nestlé's Water Policy shows its recognition of the need to preserve the quantity and quality of fresh water resources. The policy explains that the bottler “supports the sustainable use of water, strictly controls its use in the Company's activities and strives for continuous improvement in the management of water resources.”⁷² Three of the policy concerns expressed in Nestlé's Water Policy include the “[p]rotection of springs and their surroundings,” the development of “methods that minimise [sic] water consumption and waste water generation,” and the management of water to ensure that “fresh water use is reduced as much as possible and, wherever feasible, water is reused and recycled.”⁷³ These policies are not, however, binding on the bottlers.

III. ENVIRONMENTAL EFFECTS OF EXTRACTING WATER FOR SALE

The tremendous expansion of the bottled water industry has increased concerns for the maintenance of local water resources and their environments. With the removal of large quantities of water, environmentalists and local residents fear for the degradation of springs, rivers, lakes, and in the end, their municipal and well water supplies. Objections also exist because the extracted water is transferred out of the local environment and water system only to be sold for a profit across the country.

70. Golub, *supra* note 11.

71. IBWA, *Overview*, *supra* note 54.

72. Nestlé, *Nestlé Water Policy*, at <http://www.nestle-water.com/english/nestl%E9%20water%20policy.pdf> (last visited Feb. 25, 2003).

73. *Id.*

A. *Adverse Effects on the Water Supply and on the Aquifer*

1. *Extraction Conflicts With Local Water Resource Protection Plans*

The permitted consumption of millions of gallons of water for bottling each year conflicts with the establishment of local water resource protection plans put in place to conserve local water resources.⁷⁴ Many areas developed water resource plans in response to increasing populations, decreasing municipal water resources, and several years of drought conditions. As a result, it is illegal for local residents to use water at certain times for specified activities, such as lawn irrigation.⁷⁵ However, pumping gallons of water away to factories to be bottled and sold across the country directly conflicts with the goals of these programs. Water that is extracted and transferred out of the area permanently depletes the natural resource and the supply of water for the community's and the environment's needs.

2. *Extraction Leads to a Drop in the Aquifer*

The main fear of nearby residents is that the bulk removal of water from local water reservoirs will lead to a drop in the aquifer in that area. The aquifer is a "formation that can store groundwater and that is sufficiently permeable to transmit it to wells and springs."⁷⁶ When large quantities of water are removed from the aquifer without replenishment, the physical characteristics of the aquifer actually change and cause adverse effects that can be felt by nearby water sources and wells.⁷⁷ In the United States, an aquifer which covers one-third of the country is currently "being depleted at a rate eight times faster than it is being replenished."⁷⁸ Specifically, citizen activists working to protect water resources point out that local usages of water for irrigation and agricultural purposes return water to the aquifer, while the removal of water for bottling simply acts to reduce the aquifer's supply without replenishing it for use in

74. See, e.g., Year-Round Water Conservation Measures, Rules of the SWFWMD, FLA. ADMIN. CODE R. 40D-22 (1992), available at <http://www.swfwmd.state.fl.us/rules/files/40d-22.pdf> (last visited Feb. 25, 2003).

75. See, e.g., Hillsborough County, Florida, Water Restrictions, at <http://www.swfwmd.state.fl.us/waterres/restrictions/hillsborough.htm> (last visited Feb. 25, 2003).

76. TECHNOLOGY OF BOTTLED WATER, *supra* note 21, at 77.

77. See Itzhak E. Kornfeld, *Groundwater Conservation: Conundrums and Solutions for the New Millennium*, 15 TUL. ENVTL L.J. 365, 372 (2002) (discussing how water movement in aquifers depends on high and low points and that bulk extractions from a newly drilled well can cause new low points which affect water flows to existing streams, springs, and wells).

78. Maravilla, *supra* note 2, at 30.

the future.⁷⁹ In addition, when the water table, or the top of the aquifer is reduced, there is an increase in the cost and the energy needed to continue to extract water from the source for other regular purposes. Finally, a reduction in the flow of fresh water into the aquifer allows “lower quality water to flow inward and contaminate the fresh water of the aquifer.”⁸⁰

3. Extraction Causes Wells to Dry Up and Salt Water Intrusions

Similarly, there is a fear that the removal of large quantities of local fresh water will lead to the drying up of nearby wells and problems with salt water intrusion into wells near coastal areas. When excessive pumping takes place, a “drawdown cone” is achieved that results in the drastic reduction of the water table directly at the pumping site and in those areas around the pumping site itself.⁸¹ Therefore, those existing wells, which once received water at the former level of the water table, may become dry because the water level has fallen below the level of the well.⁸²

Furthermore, when the naturally strong flow of fresh groundwater is reduced by excessive withdrawals for bottling purposes, saltwater can also enter the water system and affect drinking water supplies, farmlands, and wetlands.⁸³ Saltwater’s presence in wells and freshwater resources also severely changes the environment.⁸⁴ Agriculture and natural vegetation that depend on fresh water supplied from the aquifer and local freshwater resources can no longer survive when saltwater invades the aquifer and travels further inland from the coasts.⁸⁵

79. See *Marion County v. Priest*, 786 So. 2d 623, 624-25 (Fla. 5th DCA 2001).

80. Kornfeld, *supra* note 77, at 367-68.

81. See Michael Sklash & Sharon Mason-Merrill, *Is There Enough Groundwater?*, at <http://www.dragun.com/Groundwater%20Shortage.htm> (last visited Feb. 25, 2003); Kansas Geological Survey Bulletin 120, *GroundWater: Recovery*, (Feb. 2001), at <http://www.kgs.ukans.edu/General/Geology/Reno/gw03.html> (last visited Feb. 25, 2003); Montana Ground-Water Information Center, *Typical Water Well Construction and Terms*, at <http://mbmggwic.mtech.edu/help/welldesign.asp> (last visited Feb. 25, 2003).

82. See Sklash & Mason-Merrill, *supra* note 81.

83. Tomas Matza, *Downstream Effects*, MOTHER JONES, (May 27, 2000), available at http://www.motherjones.com/news_wire/water.html (last visited Feb. 25, 2003).

84. *Id.*

85. See, e.g., Kornfeld, *supra* note 77, at 367-68 (discussing the saltwater invasion from the Mediterranean Sea into Israel’s Coastal Aquifer up to three kilometers inland).

B. Extraction's Effects on Species of Animals and Plants and Their Habitats

1. Threats to Plants and Fish from Salt Water Intrusion and Lower Water Levels

The excessive removal of water from natural environments may also reduce the water level of local fresh water resources and, therefore, threaten the fish populations and their habitats. Reduction in water levels can lead to increased water temperatures and changes in the physical and biological make-up of the water that could adversely affect fish and plant species. The removal of natural freshwater could upset fragile ecosystems and disrupt breeding grounds for native fish.⁸⁶ Also, more and longer periods of high salinity means that rivers cannot support the same varieties of organisms and species.⁸⁷

If a spring is overpumped, there is a potential for a great reduction in the habitat of plants and animals in the area surrounding the spring. Kurt Cuffey, assistant professor of geology at the University of California-Berkeley, explained that "tapping springs and aquifers even on a small scale can alter the movement of sediment in nearby streams, which can in turn disrupt the food supply for fish and other wildlife."⁸⁸ Similarly, with the increased saltwater intrusion into aquifers and fresh water resources, the fresh water species existing in the area are forced out of their natural habitats. This affects the diversity and abundance of fish in the formerly fresh water sources.⁸⁹ Finally, different levels of salinity can lead to different plant species invading the area, therefore causing a severe change in the food supply for fish and other animals.

C. Effects of Bottled Water Transportation, Facilities, and the Plastic Bottles

1. Intrusion of Industry and Trucking into Natural Areas with Rural Roads

The pumping and transportation of water from its source to the bottling plant can also lead to the destruction of the once natural environment. With the expansion of bottlers and their plants, there is greater intrusion of industry and trucking into once

86. Maravilla, *supra* note 2, at 29.

87. *Crystal Springs Recreational Pres., Inc. v. S.W. Fla. Water Mgmt. Dist.*, Fla. Admin. Order No. 99-1415 2000 WL 248392, at *16 (Jan. 27, 2000).

88. Matza, *supra* note 83.

89. *See Crystal Springs Recreational Pres., Inc.*, 2000 WL 248392, at *22.

natural areas with rural roads.⁹⁰ Trucks traveling to and from the bottling plants would adversely affect traffic in small rural towns and destruct local roads and undeveloped areas. Hiroshi Kanno, of the Wisconsin water rights group, Concerned Citizens of Newport, Inc., explained that if a permit to bottle water from nearby Big Springs was issued, there would be an increase from about four trucks per day on local roads to about 900 trucks per day.⁹¹ It is also extremely expensive to transport water from its source to the plant because of its difficulty and weight.⁹²

2. *Effects of Plastic Bottles and Recycling*

A report in 2001 commissioned by the World Wildlife Fund (WWF) estimated that 1.5 million tons of plastic were used each year worldwide to contain bottled water.⁹³ In fact, the plastic bottles themselves tend to be more expensive than the quantity of water actually contained within them.⁹⁴ Furthermore, "the energy used in manufacturing plastic bottles, recycling them, and transporting them to market all drain fossil fuels and contribute to greenhouse gases."⁹⁵ The WWF's report suggests that "[e]nvironmental impacts due to fuel combustion and energy needs are lower if the returnable bottles are simply washed and re-filled."⁹⁶ The abundant waste of plastic water bottles also pollutes the environment when they are not properly disposed of by consumers. For example, because bottled water is regularly sold in six-packs of plastic bottles and wrapped with another layer of plastic packaging, more plastic waste is created with each sale.⁹⁷

IV. LEGAL CHALLENGES TO BOTTLED WATER MANUFACTURERS

Water bottlers have faced prominent legal challenges in Michigan, Texas, Wisconsin, and Florida over their plans to establish pumping facilities on local water sources. Nestlé/Perrier of America and its subsidiary brands have faced the most challenges by citizen activist groups.⁹⁸ In addition, Canadian leaders have

90. See *Marion County v. Priest*, 786 So. 2d 623, 624 (Fla. 5th DCA 2001).

91. Telephone Interview with Hiroshi Kanno, Newport Town Clerk, Concerned Citizens of Newport, Inc. (Nov. 13, 2002) (on file with author).

92. See Letiicia M. Diaz & Barry Hart Dubner, *The Necessity of Preventing Unilateral Responses to Water Scarcity--The Next Major Threat Against Mankind This Century*, 9 CARDOZO J. INT'L & COMP. L. 1, 36 (Spring 2001).

93. Ferrier, *supra* note 10, at 9-10.

94. *Id.* at 10.

95. Carol Potera, *The Price of Bottled Water*, ENVTL. HEALTH PERSP., Feb. 2002, at A76.

96. Ferrier, *supra* note 10, at 23.

97. *Id.*

98. Lowy, *supra* note 14.

asserted their authority over their natural water resources to prevent the mass extraction of water for exportation as bottled water.

A. Michigan

1. *The Native American Tribes' Case*

In February of 2002, three Native American tribes filed a federal lawsuit against Perrier's subsidiary brand, Great Spring Waters of America, and Michigan Governor John Engler.⁹⁹ The Little Traverse Bay Bands of Odawa Indians, the Grand Traverse Band of Ottawa and Chippewa Indians, and the Little River Band of Ottawa Indians claimed that the 1986 Water Resources Development Act (WRDA) prevented Perrier's extraction of water from the Great Lakes Basin for sale as bottled water.¹⁰⁰ The WRDA requires the approval of each of the governors of the eight states bordering the Great Lakes of any diversion or exportation of water from the Great Lakes Basin.¹⁰¹ The strict approval requirement was "intended to insure broad based decision making that promote[d] the protection of the Great Lakes."¹⁰² The tribes argued that Michigan's granting of pumping permits to Perrier to extract up to 575,000 gallons of water per day would lead to the lowering of the water table in the entire Great Lakes area.¹⁰³ Furthermore, the tribes claimed that extraction of water would impact the natural environment of local rivers and streams, the navigation on local rivers and lakes, as well as the local commercial and sport fishing industries.¹⁰⁴ In response, Perrier and the state's Department of Environmental Quality claimed that bottled water, as a food product, was exempt from the WRDA.¹⁰⁵ On May 28, 2002, a federal judge ruled that the tribes' case against Perrier and Governor Engler could not persist because they did not have a right to sue under the WRDA.¹⁰⁶ The judge's ruling indicated that the WRDA

99. Press Release, The Little Traverse Bay Bands of Odawa Indians, the Grand Traverse Band of Ottawa and Chippewa Indians, and the Little River Band of Ottawa Indians, Three Tribes File Suit (Feb. 22, 2002) (on file with author) [hereinafter Three Tribes].

100. *Id.*

101. 42 U.S.C. § 1962d-20(b)(3) (2000); see Diaz & Dubner, *supra* note 92, at 24.

102. Three Tribes, *supra* note 99.

103. *Id.*

104. See Ginsburg, *supra* note 45, at 24E.

105. Michigan Land Use Institute, *Liquid Gold Rush: Executive Summary* (Oct. 2001), at <http://www.mlui.org/pubs/specialreports/waterdiversion/print4.asp> (last visited Feb. 25, 2003).

106. See Associated Press, *Judge Tosses Out Tribes' Water Suit* (June 3, 2002), at http://www.greatlakesdirectory.org/mi/060202_bottled_water.htm (last visited Feb. 25, 2003).

was intended to grant the authority to protect the Great Lakes and its basin to state governments, not to private individuals.¹⁰⁷

2. *The Citizen Group's Case*

A similar lawsuit was filed by a citizen activist group, Michigan Citizens for Water Conservation (MCWC), in September of 2001, to prevent the same mass extraction of water by the Perrier subsidiary.¹⁰⁸ The MCWC asserted that extraction of water by the Perrier subsidiary would violate the state's water and public trust law.¹⁰⁹ Terry Swier, the president of the citizen's group, explained that "[t]he public trust protects the citizens rights in these waters for fishing, boating, swimming, and survival It is unreasonable and requires the approval of our Legislature for a private water company to divert water that is held in common by all."¹¹⁰ The MCWC also argued that before the approval of the private extraction of water could take place, the state needed a comprehensive set of water laws in place to protect the state's economy and environment.¹¹¹ In October of 2002, Mecosta County Circuit Court Judge Lawrence Root dismissed three of the MCWC's claims that dealt with violations of Michigan's public trust law, public domain law, and riparian rights to water.¹¹² Judge Root did, however, postpone until May of 2003 the trial for the group's remaining claim that their "reasonable use" rights to the water were affected by the pumping.¹¹³

3. *Michigan's Water Law*

Currently, Michigan has no limits as to the amount of water that may be removed from the ground. The state's common law merely grants riparian rights to property owners that allows them to use a "reasonable" amount of the water that is found on or under their property.¹¹⁴ The title to this water, however, still rests in the hands of the state. The Michigan Land Use Institute explains that the "[c]ommon law [of Michigan] does not . . . grant such 'riparian'

107. *Id.*

108. Michigan Land Use Institute, *supra* note 105.

109. Press Release, Michigan Citizens for Water Conservation (Sept. 2001) (on file with author).

110. *Id.*

111. *Id.*

112. Telephone Interview with Gary Swier, Member, Michigan Citizens for Water Conservation (Nov. 25, 2002) (on file with author).

113. *Id.*

114. Michigan Land Use Institute, *Liquid Gold Rush: Executive Summary* (Oct. 2001), at <http://www.mlui.org/pubs/specialreports/waterdiversion/print2.asp> (last visited Feb. 25, 2003).

landowners the right to move water out of its rightful basin.”¹¹⁵ Instead, the Institute suggests that the state’s public trust doctrine obligates the state to protect its natural resources, such as water, from the interests of private individuals and corporations.¹¹⁶ Therefore, rather than allowing water from the state to be extracted and sold as a commodity, many groups argue that it should be treated like the essential natural resource that it really is.

In response to the call by residents and the MCWC for stricter water regulations in Michigan, legislators introduced a package of bills on March 7, 2002, to protect the state’s resources from mass extractions of water that drain the aquifers and cause residential wells, which depend on the aquifers, to run dry.¹¹⁷ The proposed bills would require Michigan’s Department of Environmental Quality to “establish a permit application process for ground withdrawals over 100,000 gallons per day averaged over thirty consecutive days.”¹¹⁸ The bill would also allow the Department to monitor the permit for ten years and “[a]llow a person whose use or enjoyment of their property is adversely affected by a groundwater withdrawal to obtain an injunction or other equitable relief.”¹¹⁹ The bills require their passage as a package and are currently under review in the Committee on Natural Resources and Environmental Affairs. Legislators in Michigan need to pass these bills or similar regulations based on the *quantity* of water allowed to be extracted because existing Michigan laws do not adequately protect the state’s water supply.

B. Texas

1. Citizen’s Challenge Goes All the Way to the Texas Supreme Court

In Texas, Perrier also came searching for a natural water source to fill its bottles of Ozarka Natural Spring Water. In March of 1996, Perrier’s subsidiary began to extract 90,000 gallons of water per day from Rohr Springs in Big Rock, Texas.¹²⁰ Just four days after the pumping started, local families noticed that their well water supplies were substantially depleted. Bart Sipriano, Harold

115. *Id.*

116. *Id.*

117. *Senate Package to Safeguard Groundwater*, CENT. MICH. LIFE, Mar. 25, 2002, at http://www.cm-life.com/vnews/display.v/ART/2002/03/25/3c9ebab9d9c82?in_archive=1 (last visited Feb. 25, 2003).

118. Press Release, Michigan State Senate, Senate Unveils Plan for Aquifer Protection (Mar. 7, 2002) (on file with author).

119. *Id.*

120. See Sipriano v. Great Spring Waters of America, Inc., 1 S.W.3d 75, 75-76 (Tex. 1999).

Fain and Doris Fain, residents of Henderson County, sued the Perrier subsidiary claiming their wells were negligently drained by the pumping process.¹²¹ The residents' suit also attempted to change the form of water regulations in the state from the "rule of capture," to the rule of "reasonable use."¹²²

In the trial court, the judge granted the bottled water company's motion for summary judgment.¹²³ The appeals court affirmed the grant of summary judgment to the bottler, but the residents continued to pursue their claim in the Texas Supreme Court.¹²⁴ In May of 1999, Texas Supreme Court Justice Enoch, writing for the majority, upheld the state's common law "rule of capture," which has regulated groundwater supplies in the state since 1904.¹²⁵ The court explained that the "rule of capture essentially allows . . . a landowner to pump as much groundwater as the landowner chooses, without liability to neighbors who claim that the pumping has depleted their wells"¹²⁶ as long as the landowner's negligence is not the proximate cause of the neighbor's claimed harm.¹²⁷ While other cases have pursued the change to the rule of "reasonable use" in Texas, the court noted that it has consistently rejected "reasonable use" for the "rule of capture."¹²⁸

The court also recognized that the people of Texas have empowered the legislature, through the state constitution, with the duty to protect natural resources in the state, including groundwater.¹²⁹ Therefore, it was the legislature, rather than the court, which should decide when and if groundwater regulations in the state required a change. The court recognized that in 1997, the state senate passed Senate Bill 1 which "revamped significant parts of the Water Code and other Texas statutes in an attempt to improve on this State's water management."¹³⁰ One major change in water regulation under Senate Bill 1 was the creation of "locally-controlled groundwater conservation districts for establishing requirements for groundwater withdrawal permits and for regulating water transferred outside the district."¹³¹ In the end, the majority affirmed the holdings of the lower courts and placed the

121. *Id.* at 75.

122. *Id.* at 76.

123. *Id.* at 75.

124. *Id.*

125. *Id.* at 76.

126. *Id.* at 75.

127. *Id.* at 78.

128. *Id.* at 76.

129. *Id.* at 79.

130. *Id.*

131. *Id.* at 79-80.

ball in the legislature's court to adapt the water law in the state to respond to the plaintiffs' claims.¹³²

In his concurrence, Justice Hecht criticized the court's maintenance of the "rule of capture" in Texas because it hinders groundwater management in the state.¹³³ Justice Hecht noted that Texas is the only western state out of eighteen to still follow the "rule of capture" based on outdated policy concerns.¹³⁴ However, in the end, Justice Hecht was "persuaded for the time being that the extensive statutory changes in 1997, together with the increasing demands on the State's water supply, may result before long in a fair, effective, and comprehensive regulation of water use that will make the rule of capture obsolete."¹³⁵

2. Texas Water Law

Article 4 of Senate Bill 1 specifically addresses concerns with groundwater and surface water supplies in the state. Article 4 "does not directly alter the rule of capture, [but] it does open the door for local control through the Underground Water Conservation Districts (UWCDs) to regulate unrestrained pumping" according to their respective needs.¹³⁶ Texas does not otherwise have statewide regulations on its groundwater supplies. Therefore, it must rely on its common law "rule of capture" and local conservation districts to protect its supplies.¹³⁷ The state's choice to use local districts, rather than a statewide system, allows local citizens to aid in the establishment of local water rules and the implementation of local water plans for the future.¹³⁸ The local board must submit the plan to the Texas Water Development Board (TWDB), however, for approval.¹³⁹ Because prior groundwater management legislation in the state has merely resulted in the creation of 42 conservation districts in the last 50 years, there is hope that this Bill will actively promote the state legislature's preferred method for groundwater management.¹⁴⁰

132. *Id.* at 80-81.

133. *Id.* at 81.

134. *Id.* at 82-83.

135. *Id.* at 83.

136. Cynthia DeLaughter, Comment, *Priming the Water Industry Pump*, 37 HOUS. L. REV. 1465, 1471 (2000).

137. *Id.* at 1476-77.

138. *See id.* at 1478-79.

139. *Id.* at 1479.

140. *See Sipriano*, 1 S.W.3d at 81.

C. Wisconsin

1. *The Ho-Chunk Indian Nation's Case*

In December of 1999, Perrier began its search for a source for its Ice Mountain brand of bottled water. The Ho-Chunk Indian Nation filed suit against Wisconsin's Department of Natural Resources (DNR) in October of 2000 claiming that a proposed pumping site at a nearby spring was sacred land, and that the DNR failed to consult with the tribe before issuing permits for the extraction of water.¹⁴¹ The proposed pumping site was east of Wisconsin Dells, a popular recreation and tourist area in the state. Perrier wanted to "drill two 200-foot wells that would pump a total of 500 gallons a minute near Big Spring."¹⁴² The tribe's action was the third such action brought against Perrier's proposal to pump water in the area, but a circuit court judge threw out the tribe's claim in April of 2002.¹⁴³

2. *Citizens' Group Suits*

Two citizen activist groups in the state have also waged legal battles against the DNR, the bottled water giant, Perrier, and its subsidiary. Waterkeepers of Wisconsin (WOW) filed its suit in Adams County on October 18, 2000 against a Perrier subsidiary, Great Spring Water of America, Inc.¹⁴⁴ WOW claimed that the bottler's drilling of two high-capacity water wells in the town of New Haven violated a county zoning ordinance which zoned the area for agricultural use.¹⁴⁵ WOW also opposed the bottler's construction of a one million-square foot bottling facility two miles from the wells in the rural town. WOW sought

the removal of wells that have already been installed, an injunction forbidding drilling, construction and utilization of wells which violate Adams County zoning ordinances, and a declaratory judgment determining the test wells may not be utilized and production wells may not be installed or utilized because they violate local zoning laws.¹⁴⁶

141. See *Ho-Chunk Sue DNR Over Perrier Drilling*, *supra* note 17.

142. *Id.*

143. Telephone Interview with Hiroshi Kanno, *supra* note 91.

144. Press Release, Waterkeepers of Wisconsin, Inc., Waterkeepers of Wisconsin Files Lawsuit (Oct. 18, 2002) (on file with author).

145. *Id.*

146. *Id.*

According to Joan Byers, WOW member, the suit against the bottler remains on hold until the bottler officially decides if it will locate its facility in New Haven.¹⁴⁷

Concerned Citizens of Newport, (CCN) Inc. also filed suit in October of 2000 against the DNR claiming that by conditionally approving permits for the bottler to remove large quantities of water from the Big Springs, “the DNR violated its own regulations, Wisconsin’s Environmental Protection Act (WEPA) and its duty to protect the public trust in its actions.”¹⁴⁸ Newport Town Clerk and CCN member, Hiroshi Kanno, stated that in April of 2002, Columbia County Circuit Court Judge Wright approved the disputed contract between the bottler and the DNR, failed to mention the CCN’s public trust doctrine argument, and required the bottler to file an extensive environmental impact statement in order to comply with WEPA.¹⁴⁹ The judge also required public participation in the bottler’s future permit approval process. Kanno also happily noted that the bottler failed to renew its permit to pump from Big Springs in September of 2002, therefore, if it chooses to return to Wisconsin, it will have to complete the entire permitting process again.¹⁵⁰

D. Canada

Finally, in Canada, the government has taken an active role in protecting its natural fresh water resources from mass extractions and exportation. In February of 1999, Canada’s Parliament voted unanimously to approve a moratorium on all bulk exports of the nation’s water.¹⁵¹ The moratorium described bulk water exports as “the siphoning of freshwater from lakes or other areas for shipment through pipelines, diversions, or by sea on supertankers.”¹⁵² It was intended to prevent U.S. and Canadian companies from shipping Canada’s plentiful fresh water supply to the American southwest and midwest for agricultural and consumer use.¹⁵³ The moratorium, however, did not place any further limits on domestic bulk water extraction to be sold as bottled water within Canada.

147. Telephone Interview with Joan Byers, Member, Waterkeepers of Wisconsin, Inc. (Nov. 13, 2002)(on file with author).

148. Press Release, Waterkeepers of Wisconsin, Inc., *supra* note 144.

149. Telephone Interview with Hiroshi Kanno, *supra* note 91.

150. *Id.*

151. Maravilla, *supra* note 2, at 29.

152. *Id.*

153. *Id.* at 31.

There were three main sections to the moratorium. The first section changed the International Boundary Waters Treaty Act (IBWTA) to give Canada's government the authority to prevent mass fresh water exportation from water sources bordering the United States.¹⁵⁴ The second section required the creation of an International Joint Commission (IJC) with the United States to study the effects of bulk water exports on the "consumption, diversion and removal from boundary waters."¹⁵⁵ The third and final section allowed Canada to join with its territories and provinces in a nationwide agreement to protect its natural water resources from bulk exportation.¹⁵⁶ Although many have argued that Canada's moratorium violates the North American Free Trade Agreement (NAFTA), it is unlikely that any claims will prevail because Canada, the United States, and Mexico agreed in 1993 that NAFTA did not apply to the bulk exportation of fresh water resources.¹⁵⁷

V. CASE STUDY ON THE SALE OF BOTTLED WATER BY ZEPHYRHILLS FROM THE CRYSTAL SPRINGS

The Nestlé/Perrier group also faced a legal challenge in Crystal Springs, Florida. Crystal Springs is a natural spring located 15 miles north of Tampa, Florida.¹⁵⁸ The water in the spring originates from the upper Floridian aquifer.¹⁵⁹ Its water feeds into the Hillsborough River, which in turn supplies municipal water to the residents and businesses of Tampa. The springs supply the majority of the water to the Hillsborough River during its natural low-flow periods.¹⁶⁰

A. *History of the Springs and the Dispute*

In 1911, R.W. Burke and his wife conveyed a warranty deed for a 24,000 acre tract of land, including the natural Crystal Springs, to A.B. Hawk of Toledo, Ohio.¹⁶¹ Hawk then formed a company, The Co-operative Homestead Company, to develop the tract of land with 10 to 40 acre farms to be sold. The area was called "The Crystal Springs Colony," and with a lot came a promise of perpetual

154. *Id.*

155. *Id.*

156. *Id.*

157. *Id.* at 35.

158. Save our Springs, Inc., *supra* note 19.

159. Crystal Springs Recreational Pres., Inc. v. S.W. Fla. Water Mgmt. Dist., Fla. Admin. Order No. 99-1415, 2000 WL 248392, at *5 (Jan 27, 2000).

160. *Id.*

161. Save our Springs, Inc., *supra* note 19.

recreational and consumptive use of the spring and its clear waters. In 1912, forty acres of Hawk's tract of land was dedicated and recorded as a public park reservation and was subsequently called "Crystal Springs." Over the next 17 years, Hawk and his business partners were involved in many schemes and questionable land deals. The main issue, however, was the fact that Hawk refused to abide by an original land purchase agreement which stated that when the colony grew to include 100 families, he would grant to the colony control of the Crystal Springs. When the colonists took legal action against Hawk to preserve their rights to the springs, a federal judge in Jacksonville, Florida declared their suit null and void.¹⁶²

With the clear legal ownership of the springs declared in his name, Hawk decided to lease the springs and the rights to bottle spring water to a man by the name of Waters.¹⁶³ In 1929, Hawk ultimately sold the springs to a group of private owners from New York, from which Mabry and Crowder of Tampa purchased the springs in 1944. Finally, in 1975, the springs were purchased by the current owners, the Thomas family.¹⁶⁴

B. Permit to Pump and Contract with Zephyrhills

The Thomas family was able to preserve the springs' natural beauty and recreational charm for many years. The springs remained open to the public for more than 20 years. Robert Thomas, President of the Crystal Springs Recreation Preserve ("Preserve"), received a water use permit to remove water from the springs to sell to Zephyrhills Water Company in 1989.¹⁶⁵ Thomas was permitted to withdraw 301,000 gallons of water per day from the springs until 2004.¹⁶⁶ In 1996, the Preserve closed the springs to the public "to protect the 'quality and quantity of the springs and the surrounding area.'"¹⁶⁷ Thomas promised to reopen the springs in 1997 as a research center, but he has yet to do so.¹⁶⁸

162. *Id.*

163. *Id.*

164. *Id.*

165. See James Thorner, *Swiftmud Asks For Perrier Plan Data*, ST. PETERSBURG TIMES, PASCO TIMES, Aug. 18, 1998, at 1, 5.

166. Brady Dennis, *Rancher Lets Too Much Spring Water Be Taken*, ST. PETERSBURG TIMES, PASCO TIMES, Oct. 5, 2000, at 1.

167. Green, *supra* note 20.

168. See David Karp, *Spring Owner Withholds Study*, ST. PETERSBURG TIMES, June 17, 1998, at 3B.

C. Increase in Permit Sought with the Local Water Management Board

In 1998, Thomas sought to increase his water use permit from 301,000 gallons per day to 1.8 million gallons per day until 2008.¹⁶⁹ The Preserve submitted a year long study that “concluded that its proposed withdrawal would not cause quantity or quality changes that adversely impact the water resources.”¹⁷⁰ In January of 1999, however, the Southwest Florida Water Management District (SWFWMD or SWIFTMUD) replied with a Notice of Proposed Agency Action to deny the Preserve’s permit because it did not offer reasonable assurances that its proposed permit would meet each of the statutory requirements for permitting bulk water extraction.¹⁷¹

D. Appeal to an Administrative Law Judge and The Second District Court of Appeal

The Preserve filed a petition for an administrative hearing with SWIFTMUD in February of 1999.¹⁷² SWIFTMUD referred the petition to Florida’s Division of Administrative Hearings in March of 1999.¹⁷³ Administrative Law Judge (ALJ) Lawrence Stevenson was required to determine “whether ... [the Preserve] ... provided reasonable assurances ... that it has satisfied the conditions for [water use] permit issuance.”¹⁷⁴ The ALJ recognized that the Preserve carried the burden to show both individually, based on fourteen separate factors, and cumulatively that it had satisfied SWIFTMUD’s conditions to receive a valid permit to increase its pumping.¹⁷⁵

SWIFTMUD requires that those seeking permits for water use provide reasonable assurances on several individual factors related to the extraction of water from natural resources.¹⁷⁶ The parties

169. *Crystal Springs Recreational Pres., Inc. v. S.W. Fla. Water Mgmt. Dist.*, Fla. Admin. Order No. 99-1415, 2000 WL 248392, at *1 (Jan. 27, 2000).

170. *Id.* at *7.

171. *Id.* at *8.

172. *Id.* at *1.

173. *Id.*

174. *Id.* at *9.

175. *Id.*; see FLA. STAT. § 373.223 (2002), implemented by FLA. ADMIN. CODE ANN. R. 40D-2.301(1) (2002).

176. FLA. ADMIN. CODE ANN. R. 40D-2.301(1) (2002). Under the current form of rule 40D-2.301(1), the party seeking the permit must provide:

reasonable assurances, on both an individual and a cumulative basis, that the water use: (a) Is necessary to fulfill a certain reasonable demand; (b) Will not cause quantity or quality changes which adversely impact the water resources, including both surface and groundwaters; (c) Will not cause adverse environmental impacts to wetlands, lakes, streams, estuaries, fish and wildlife or other natural resources; (d) Will comply

stipulated that the Preserve satisfied seven of the factors before the suit.¹⁷⁷ The ALJ then determined that the Preserve had also satisfied its burden in three additional factors. Rule 40D-2.301(1)(a) required the Preserve to show that its permit was necessary to fill a certain reasonable demand.¹⁷⁸ The Preserve and Zephyrhills pointed to the fact that the source of all of its bottled water was the Crystal Springs. Therefore, it claimed that if SWIFTMUD rejected its permit, it would face difficulties in finding another water source or it would be forced to stop bottling at Crystal Springs entirely.¹⁷⁹ The Preserve also explained that its greatly increased pumping request was necessary to keep up with its calculated 20-22% annual growth rate.¹⁸⁰ However, SWIFTMUD claimed that the Preserve failed to adequately support its calculated growth rate with actual data. Therefore, SWIFTMUD itself had to conduct an independent study and came to merely a 17.5% annual growth rate.¹⁸¹ The ALJ agreed that SWIFTMUD's growth rate was closer to the statistical information required to show necessity under 40D-2.301(1)(a), and he determined that the Preserve failed to satisfy its burden on that factor.¹⁸²

Rule 40D-2.301(1)(b) required the Preserve to show that no quantity or quality changes would adversely impact the water resources in the area.¹⁸³ The Preserve claimed that their additional extractions would have no quantitative effect on the local ground water system because Crystal Springs is a "naturally discharging spring" that would have discharged the same amount of water from the spring, no matter if it was captured by a pipe or not.¹⁸⁴ The Preserve did admit, however, that its increased pumping would reduce the flow of the Hillsborough River and would take water

with the provisions of 4.3 of the Basis of Review described in Rule 40D-2.091, F.A.C.; (e) Will utilize the lowest water quality the Applicant has the ability to use; (f) Will not significantly induce saline water intrusion; (g) Will not cause pollution of the aquifer; (h) Will not adversely impact offsite land uses existing at the time of the application; (i) Will not adversely impact an existing legal withdrawal; (j) Will incorporate water conservation measures; (k) Will incorporate reuse measures to the greatest extent practicable; (l) Will not cause water to go to waste; and (m) Will not otherwise be harmful to the water resources within the District.

177. *Crystal Springs Recreational Pres., Inc.*, Fla. Admin. Order No. 99-1415, 2000 WL 248392 at *9.

178. *Id.*

179. *See id.* at *10.

180. *Id.*

181. *Id.* at *11.

182. *Id.* at *13.

183. *Id.*

184. *Id.*

from the river and the City of Tampa even on days when it was most needed.¹⁸⁵ As a result, the ALJ determined that the Preserve failed to satisfy its quantitative burden. Conversely, the ALJ could not determine that the Preserve failed to satisfy its qualitative burden because there was disputed evidence from both parties. As a result, the ALJ ruled that the Preserve had satisfied the qualitative factor.¹⁸⁶

Rule 40D-2.301(1)(c) required the Preserve to show that no adverse environmental impacts would result to “wetlands, lakes, streams, estuaries, fish and wildlife, or other natural resource[s]” in the area.¹⁸⁷ The ALJ determined that SWIFTMUD’s generic environmental concerns could not override the Preserve’s evidence of few adverse environmental effects to the area from its increased pumping.¹⁸⁸ Similarly, the ALJ determined that the Preserve satisfied its burden to show, according to rule 40D-2.301(1)(f), that its increased pumping would not lead to a large saline water intrusion into the area’s aquifers.¹⁸⁹

Finally, rule 40D-2.301(1)(i) required the Preserve to show that no adverse impacts would result to existing legal withdrawals of water.¹⁹⁰ SWIFTMUD argued that the only other legal user of the spring water was the City of Tampa via the Hillsborough River, and any increase in the withdrawals from the springs would certainly lead to a decrease in the flow of the river to Tampa. SWIFTMUD worried about “the impact the proposed withdrawals would have on the City of Tampa’s water supply during low-flow periods, when the City is most dependent on flow from the Hillsborough River.”¹⁹¹ In the end, the ALJ sided with SWIFTMUD’s findings and further based his decision on the fact that the Preserve’s “[a]pplication makes no provision for lesser withdrawals during low-flow periods on the Hillsborough River.”¹⁹²

The Preserve was also required to show that no adverse cumulative impacts would result from its proposed increase in pumping. The ALJ stated that it had only succeeded in providing reasonable assurances on factors (c), (f), (k), and (m).¹⁹³ The ALJ noted that SWIFTMUD had, instead, provided the “greater weight of the evidence ... that the Preserve failed to provide reasonable

185. *Id.* at *14.

186. *Id.* at *19.

187. *Id.*

188. *Id.* at *23.

189. *Id.* at *25.

190. *Id.* at *26.

191. *Id.*

192. *Id.* at *27.

193. *Id.* at *42.

assurances on a cumulative basis” on factors (a), (b), and (i).¹⁹⁴ Therefore, in his recommended order to SWIFTMUD, in January of 2000, the ALJ determined that the “Preserve ... failed to provide reasonable assurances, on both an individual and a cumulative basis” to meet the requirements of receiving a permit from SWIFTMUD.¹⁹⁵ The ALJ recommended to SWIFTMUD’s 11-member governing board that it deny the Preserve’s increased permit request. After SWIFTMUD’s denial of the permit request, the Preserve appealed to Florida’s Second District Court of Appeal. In February of 2001, the court of appeal affirmed the decision of SWIFTMUD without a published opinion.¹⁹⁶ This ruling likely brought an end to the Preserve’s proposed permit increase, yet the future of Zephyrhills Spring Water, from Crystal Springs, Florida, is still undetermined.

VI. RECOMMENDATIONS FOR A LEGAL FRAMEWORK TO PROTECT WATER RESOURCES WITHIN THE STATES

Because many states lack adequate regulations on bottled water extraction, their resources are extremely vulnerable to abuse and absolute depletion. Therefore, legislators must propose strict regulations in order to protect their own fresh water resource supplies.

A. *States Should Classify Water as a Natural Public Resource*

In order to protect the nation’s fresh water resources, it is necessary to change water’s regulatory status from that of a tradeable good, to that of a finite and threatened natural resource. Just like any other non-renewable resource, the more water that is extracted, bottled, and sold, the less that remains in the resources themselves. Furthermore, by protecting water as a public resource, it is “incapable of private ownership” or abuse, and it cannot be considered a taking to restrict its use.¹⁹⁷ Holding water supplies in a public trust gives the states the authority over water above that of all other claimants. With this authority, states can protect and preserve their fresh water resources adequately.¹⁹⁸

States also need to recognize that each source of water within their borders is part of an invaluable global ecosystem which

194. *Id.*

195. *Id.*

196. Crystal Springs Recreational Pres., Inc., v. S.W. Fla. Water Mgmt. Dist., 782 So. 2d 390 (Fla. 2d DCA 2001).

197. Diaz & Dubner, *supra* note 92, at 33.

198. *See id.* at 38.

provides broader benefits and effects than simply those in the direct area of the resource. Under the broad principle of “inter-generational equity,” states must take protective measures for our water resources because “as ‘members of the present generation, we hold the earth in trust for future generations’ ... [and] ‘at the same time, we are beneficiaries entitled to use it.’”¹⁹⁹ States must plan to use water resources responsibly in order to ensure an adequate supply for future needs and to ensure the survival of the environment. One possible solution would be to require states to establish a reliable monitoring system for their supply of fresh water resources.²⁰⁰

B. States Should Strictly Restrict Bulk Transfers of Water

State legislation needs to define and establish stricter regulations on commercial water extractions and transfers of local freshwater resources. States need to develop stricter rules for the permitting of bulk water withdrawals and for the review of those permits by water management districts. For example, states can establish a special permit application process for bulk water extractions that will consist of more than “x” gallons per day for “x” number of days, where the factors will depend on the water supply deemed available in the area by the water management district itself. States should also require more extensive environmental impact studies by local water permitting boards to look into not only current or near future environmental effects, but also cumulative potential future impacts of bulk water extraction from resources. Finally, states may also choose to provide relief in the form of a compensation system to private well owners and to the public in general, who are adversely affected by bulk water extractions.²⁰¹

C. States Should Encourage Experimentation with Desalinization Processes

States should also consider encouraging bottlers to experiment with desalinization systems for water in order to find new sources of potable water without depleting natural fresh water resources beyond their replenishment. For example, in Tampa, Florida population growth and the lack of a natural abundance of fresh

199. *Id.* at 28.

200. See Michigan Land Use Institute, *Liquid Gold Rush: Executive Summary* (Oct. 2001), at <http://www.mlui.org/pubs/specialreports/waterdiversion/print6.asp> (last visited Feb. 25, 2003).

201. Michigan Land Use Institute, *Liquid Gold Rush: Executive Summary*, Oct. 2001, at <http://www.mlui.org/pubs/specialreports/waterdiversion/print3.asp> (last visited Feb. 25, 2003).

water resources has forced the Tampa Bay Water Authority to seek out new options like desalinization in order to supply water to those who need it.²⁰² States can provide benefits to bottlers who invest in desalinization research and technology to enhance the value of abundant saltwater resources, and local water management boards can use tax money collected from local citizens to help support the movement towards desalinization.²⁰³

D. States Should Charge Consumers and Establish Eco-Labeling Programs to Cover the Costs of the Bottled Water Demand

Finally, states can charge bottled water consumers, rather than the producers, for some of the costs created by the great demand for bottled water. Legislators can add a tax to all bottled water sales to be used in order to preserve springs and their environments. While these taxes will not replenish the water supply itself, they can protect against the harms that may further deplete the resources. For example, a trust fund may be established in a state with taxes from bottled water sales in order to “enhance research, stewardship, quality, public access, con-servation, and restoration” of the state’s fresh water resources.²⁰⁴

Another option for states to explore would be the establishment of an eco-labeling system for bottlers selling their product in the state. The eco-label would indicate that the bottlers comply with strict environmental and water extraction standards set by the state to ensure the persistence of fresh water resources. Consumers could also rely on these eco-labels in making their purchases. This would likely weed out the most environmentally abusive bottlers and inform the demanding consumers of the threats created by the bottled water industry.

VII. CONCLUSION

The bottled water industry has grown tremendously in the past two decades, yet few laws exist to regulate the quantity of water that is pumped from the nation’s fresh water resources. Extraction of large amounts of water threatens water supplies which individual wells and municipalities depend upon. It can also adversely affect the environment of the resource and local species of animals, fish, and plants. As legal challenges to bottlers proposed pumping actions increase, state legislatures must enact stricter

202. Douglas Jehl, *Tampa Bay Looks to the Sea to Quench Its Thirst*, N.Y. TIMES, Mar. 12, 2000, at A1.

203. *See id.*

204. Michigan Land Use Institute, *supra* note 201.

legislation to protect the *quantity* of their fresh water resources for the future.