

elva.

# Bottled Water and Our Environment



# Environmental Impact of Bottled Water

From the creation of the plastic bottle itself to the transportation of the finished product to stores, offices and homes, bottled water has a significant and well documented impact on our environment. The amount of natural resources consumed and the pollution created by the production and transport of bottled water is out of balance with its benefits. We created Elua to help reduce your carbon footprint by providing a sustainable alternative to bottled water without sacrificing taste, quality or convenience.

## Bottled Water Needs Plastic Bottles

- Nearly 50 billion new PET (polyethylene terephthalate) plastic bottles were produced in 2005 from virgin rather than recycled materials. (10)
- The Pacific Institute estimated that approximately one million tons of PET were produced to make the plastic bottles consumed in the United States in 2007 and three million tons were produced globally. (4)
- In 2004, only 14.5 percent of non-carbonated beverage bottles made from PET were recycled. (10)
- The Earth Policy Institute reported in 2007 that manufacturing the 29 billion plastic bottles used for water in the United States each year requires the equivalent of more than 17 million barrels of crude oil. (3)

## Getting Water Into The Bottle And On The Shelf

- Americans bought a total of 8.8 billion gallons of bottled water in 2007. According to one estimate, producing these bottles produced over 2.5 million tons of carbon dioxide. This is the same amount of carbon dioxide that would be emitted by over 400,000 passenger vehicles in one year. (10)
- Bottled water brands Evian and Volvic travel over 6,200 miles in order to get onto shelves in San Francisco, USA. Fiji and Voss travel over 5,000 miles to reach San Francisco. (9)
- The total carbon footprint of one 500 mL bottle of water in North America is 82.8g of CO<sub>2</sub> (1). This includes the PET bottle, distribution and transportation, retail energy use and the corrugated tray but does not include recycling. In comparison, driving a compact car like the Nissan Versa produces 254 grams per mile of CO<sub>2</sub> thus every case of 24 bottles consumed is the equivalent of the emissions produced by driving 7.8 miles. (2)
- The Pacific Institute estimates that the annual consumption of bottled water in the US in 2007 required an energy input equivalent to between 32 and 54 million barrels of oil or a third of a percent of total US primary energy consumption. (4)

# Where Do All Those Plastic Bottles Go?

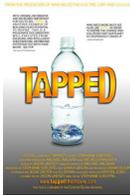
- Each day in the US more than 60 million plastic water bottles are thrown away – a total of about 22 billion in 2006. Most end up in landfills or incinerators, and millions litter American's streets, parks and waterways. Six times as many plastic water bottles were thrown away in the US in 2004 as in 1997. (8)
- While well developed systems for recycling PET bottles exists in the U.S., recycling rates have been falling for a decade, and in 2006 only 23% of PET bottles sold were recycled (NAPCOR, 2007). The remaining bottles end up in a landfill, amounting to roughly 4 billion pounds of bottles per year (Kchao, 2008). (6)
- The North Pacific Subtropical Gyre is an area of the ocean between Hawaii and California that collects floating debris and garbage from North America and Asia. Within the gyre, scientists have collected 1,900,000 bits of plastic in a single square mile. No one knows how much debris makes up the entire patch. The North Pacific Subtropical Gyre is about 7 million square miles in size.(3)
- According to NAPCOR, US exports to countries like China of scrap PET bottles increased from 143 million pounds (65 millino kg) in 1998 to 298 million pounds (135 million kg) in 2004. (8)

# What About 100% Compostable Corn Based PLA Plastic Water Bottles?

- Corn based resin, known as polylactic acid (PLA) is significantly better than oil based plastics however; its claim of being 100% compostable is only based on commercial composting in advanced, high heat facilities. Only 150 such facilities exist in the US which means most PLA bottles end up in regular recycling facilities which cannot "compost" the bottle or landfill sites. A PLA bottle will last as long as a PET plastic bottle disposed of in a standard landfill site. (11)
- In their report titled "Life Cycle Inventory (LCI) Summary for PLA and PET 12-Ounce Water Bottles" prepared for the PET Resin Association, Franklin Associates stated:
  - The PLA water bottles require significantly more total and net energy than the PET water bottle systems (with or without the inclusion of recycling).
  - The postconsumer solid waste is higher for the PLA water bottle compared to a PET water bottle including recycling. The postconsumer solid waste for the PET water bottles with no recycling is considered equivalent to that of the PLA water bottles.
  - The carbon dioxide equivalent totals (GHG) for all systems (PLA and PET) are within 5 percent of each other and so are not considered significantly different. (5)

# Want to Learn More?

Want to learn even more about the environmental impact of bottled water? Check out the following documentaries and books.



## Tapped - the Movie

Tapped examines the role of the bottled water industry and its' effects on our health, climate change, pollution, and our reliance on oil.



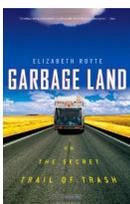
## The Story of Bottled Water

The Story of Bottled Water tells the story of manufactured demand—how you get Americans to buy more than half a billion bottles of water every week when it already flows from the tap.



## Bottlemania

Bottlemania examines the state of tap water today (you may be surprised), and the social impact of water-hungry multinationals sinking ever more pumps into tiny rural towns.



## Garbage Land: On the Secret Trail of Trash

In Garbage Land, acclaimed science writer Elizabeth Royte leads us on the wild adventure that begins once our trash hits the bottom of the can.



## Bottled and Sold

A world-renowned scientist and freshwater expert, Peter Gleick is a MacArthur Foundation "genius," and according to the BBC, an environmental visionary. And he drinks from the tap. Why don't the rest of us?

## Fiji: Spin the Bottle

The latest from the military dictatorship that benefits from progressives' favorite water.

Author: Anna Lenzer | September/October 2009 Issue Mother Jones

<http://www.motherjones.com/politics/2009/09/fiji-spin-bottle?page=1>

## H2Uh-Oh

From Arrowhead to Volvic, Fiji's not the only bottled water with a PR challenge.

Author: By Jen Quraishi | September/October 2009 Issue Mother Jones

<http://www.motherjones.com/politics/2009/09/h2uh-oh>

## How Far Did Voss and San Pellegrino Travel to My Whole Foods?

We charted the miles per bottle for nine top water brands.

Author: Jen Quraishi | September/October 2009 Issue Mother Jones

<http://www.motherjones.com/politics/2009/09/how-far-did-voss-and-san-pellegrino-travel-my-whole-foods>

## Think Outside the Bottle: the Responsible Purchasing Guide to Bottled Water Alternatives

Lead Author: Courtney Godwin, Responsible Purchasing Network

[http://sustainability.tufts.edu/wp-content/uploads/RPNbottledwaterpurchasing\\_guide.pdf](http://sustainability.tufts.edu/wp-content/uploads/RPNbottledwaterpurchasing_guide.pdf)

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9. <http://www.motherjones.com/politics/2009/09/how-far-did-voss-and-san-pellegrino-travel-my-whole-foods>

10. Think Outside the Bottle: the Responsible Purchasing Guide to Bottled Water Alternatives is a joint effort by the Responsible Purchasing Network and Corporate Accountability International. Lead Author: Courtney Godwin, Responsible Purchasing Network

11. [http://education.nationalgeographic.com/education/encyclopedia/great-pacific-garbage-patch/?ar\\_a=1](http://education.nationalgeographic.com/education/encyclopedia/great-pacific-garbage-patch/?ar_a=1)

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