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The **Johnson** **Foundation**
AT WINGSPREAD

Conferences that Inspire Solutions

Much of what you see here is inspired by conversations that took place during The Freshwater Forum conference series, launched in early 2009 and held at The Johnson Foundation at Wingspread in Racine. At these conferences, over 200 leading national experts came together to discuss how government, business and institutions can more effectively manage the looming crisis that threatens our nation's freshwater resources and systems and the health of our communities. These conferences set the stage for The Johnson Foundation at Wingspread Freshwater Summit, held on June 8th and 9th, 2010, in which leaders in business, government and not-for-profits were asked to develop a national call-to-action and a set of key water initiatives. The product of this labor, Charting New Waters: A Call to Action to Address U.S. Freshwater Challenges, *is being released publicly after September 15th. You can download a copy at www.johnsonfdn.org. If you have any further questions, please contact Susie Seidelman, Environment Program Associate, at sseidelman@johnsonfdn.org, or (262) 681-3358.*

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A Personal Call to Action:
Our Commitment to Water

Water touches our lives in countless ways, every day. Most of us are aware of this – after all, we need water to cook, to clean, to do most activities that sustain a healthy way of life. Frankly, we need water to survive – we're made of it. But so often overlooked in our everyday interactions with water are the myriad ways in which it's tied to pretty much everything. In this guide, we'll provide a number of examples that highlight this, in addition to many ways in which each and every one of us can work to protect and conserve this important resource.

This seems like a big number, and it is. Unfortunately, the stark reality is the products we use and consume everyday cost a lot of water to make. The good news, however, is we, as consumers, have choices. We can choose what to buy, when, and from where, and if we have the right information and commit to making sustainable choices, we can choose to minimize our personal water footprint.

Much of what you'll read here is based on the concept of water footprinting. Someone's water footprint is a measurement of the amount of water they use, both directly (such as through drinking or bathing) and indirectly (the amount of water it takes to produce products, like food or clothing, or services, such as electricity). The amount of water necessary to produce something is often referred to as its water cost. For example, the amount of cotton in one pair of jeans costs 1800 gallons of water to produce.[1] In other words, in order to grow the amount of cotton necessary to make the denim material in one pair of jeans, 1800 gallons of water will be used.

Food! Glorious Food!

Food nourishes our bodies, our souls, and our relationships – when we sit down to table with family and friends, a special kind of magic is made. But at what cost? Food needs water to grow – this is a given. But some foods cost a lot more water than others. Let's take a look at a few examples, and some ways to minimize your water footprint with every choice you make.

Beef, a very common staple in American kitchens, is one of the more water-costly foods we consume – every pound of beef costs about 7500 liters of water (imagine a 2 and a half mile long line of 2-liter soda bottles standing shoulder to shoulder, and you get an idea of what we're talking about).[2] The beef sold in conventional

grocery stores is grain fed and finished, which means it's fed a diet of corn. Corn takes a lot of water to grow, and this contributes to the overall water-cost of that pound of hamburger in the meat drawer. Because it is so centered on meat and dairy consumption, the average American diet costs approximately 1000 gallons of water per day to produce. Conversely, the global average water footprint per person, per day for diet, household use, transportation, energy, and the consumption of material goods is 900 gallons *combined*. Simply cutting back on meat, dairy and processed foods not only helps reduce our water footprint, but also makes for a healthier community. Consuming pasture raised, grass fed animal products is another big help – when sustainably farmed, these animals feed on naturally occurring fields of grasses that do not require irrigation, saving thousands of liters of water.

Beef seems easy – animals eat and drink, so obviously they'll cost a lot of water to produce. But what about other things besides animals? What about...beer? Brace yourself: it takes about 315 pints of water to produce 1 pint of beer.[3] Most of this water is used to grow the barley from which the beer is made. If this is not a locally produced beer, this figure rises astronomically, simply because of the energy used in the transportation of the beer to you. This is true for virtually all food choices: locally produced or grown products save water, because there are also water costs embedded in the transportation of food (gasoline costs water to make, too - 13 gallons of water for every gallon of gas, to be precise.[4]) Consider how far your food has to travel, and buy locally to reduce your water footprint. (As an aside, if you needed an additional push to kick that coffee addiction, think about this every morning: a cup of coffee takes 55 gallons of water to make.[5] It's impossible to find locally sourced coffee, so no excuses!)

Water and Energy – Together Forever

In the last section, we hinted at the relationship between water and energy, but how linked are they, really? When considering conventional energy sources (like electricity from a power plant), there's only one answer to that question – inextricably. A tremendous amount of water goes into the extraction of energy, and it takes a tremendous amount of energy to move water. To really understand our water footprint, we must understand the inherent link in these things. Let's look at some practical examples:

It takes an average of 95 liters of water to produce 1 kilowatt hour (kWh) of energy.[6] To put this into perspective, in a 24 hour period of use, the following kilowatt hours of energy are consumed:

- A central air conditioning unit uses 84 kWh, which costs 7980 liters of water
- A 48" ceiling fan uses 1.8 kWh, which costs 171 liters of water
- A refrigerator (manufactured after 2001) uses 1.7 kWh, which costs 161.5 liters of water
- A 60 watt light bulb uses 1.4 kWh, which costs 133 liters of water
- A 60 watt CFL equivalent uses 0.4 kWh, which costs 38 liters of water
- A laptop computer uses 1.1 kWh, which costs 104.5 liters of water

In these examples, there are some glaring differences. Central air conditioning costs about 7800 liters more than a ceiling fan. On days when you can stand it, skipping the A/C is a great way to reduce your water footprint. Similarly, CFL bulbs cost almost 100 liters of water less than their incandescent counterparts. Changing those light bulbs saves more than just energy and money!

What's Next? Directions for the Future

There are many practical steps one can take to save water, including testing for and fixing any leaks[7], retrofitting your home with low flow toilets and other water and energy saving devices, and planting rain and native gardens. These steps are all good ones, but the most fundamental thing you can do to save water is to understand your choices and their impacts. We all want clean, healthy freshwater for ourselves, our families and our communities. To have this, we must protect freshwater, and that often means challenging the way we think about it and the lengths we're willing to go to protect it. It's hard to view something that flows so readily and inexpensively from our taps as endangered. Nevertheless, it is – scientists predict that with the threats to our drinking water brought about by climate change[8], the increasingly polluted state of the majority of our rivers, streams and lakes[9], and the drawdown of water supplies[10], we are in a time of impending freshwater crisis. As we work together on these issues, we must invest in the changes we wish to see, and we must understand that these changes need to start with ourselves. What will you do to reduce your water footprint?

Additional Ideas and Resources

- Create a household resource efficiency program – examine your bill over several months to determine the amount of water and energy used. Make goals of how you'll decrease this number. Implement the plan, with rewards for everyone! This is a great way to get kids involved, and to teach them the importance of conservation. Tell your neighbors what you're up to – maybe the whole neighborhood would like to be involved!

- The next time you plan a purchase, consider more than just the monetary costs. Think about how much water is used, and whether or not there's a better way for you to meet your need. When you think about energy consumption, don't forget to think about water.

- For over 100 tips on how to conserve water, check out this website: wateruseitwisely.com/100-ways-to-conserve/index.php

- To begin to estimate household and individual water footprints: www.h2oconserve.org/