

## How Big is Your Water Footprint?

by Melissa Hartman

You've heard of carbon footprints, which measure human impact on the environment in units of carbon dioxide. Maybe you've even calculated your ecological footprint, a measure of the land it would take to produce the resources you use and absorb the waste you create. But have you ever considered your water footprint?

If you turn off the water while you brush your teeth and take short showers, you might think your water footprint is pretty small. Maybe your home even uses low-flow faucets and toilets, washes only full loads of laundry, or collects rainwater to use in the garden. These direct uses are all important in terms of conserving water locally, but they are minor in terms of calculating your water footprint.

Because your footprint also includes the water used to produce the items you buy and consume, the largest contributors to your footprint are the food you eat and the clothes you wear. It takes about 700 gallons of water to produce a cotton shirt and 2,800 gallons to produce a pair of jeans, including the water required to grow and process the cotton and to dye the fabric. It takes about 250 gallons of water to produce a glass of milk (think about what a dairy cow drinks and eats—and what it takes to grow that food) and about 35 gallons for a cup of coffee.

Of course, the water used to grow crops is renewable: it evaporates and returns as rain. But it is fresh water that is at least temporarily unavailable to the local population. If the crops are being grown (or the product manufactured) in an area with plentiful water supplies, a big water footprint may actually have little impact. If the crops are grown in arid regions and require intensive irrigation, diverting water from rivers or sources of drinking water, a large footprint has large consequences.

Economists call the water used to grow crops and make products "virtual water." When countries import and export crops and products, they are essentially trading virtual water. In a 2008 article in *Forbes*, Fred Pearce, author of the book *When the Rivers Run Dry*, uses examples from the U.S. to point out the dangers of exporting too much virtual water:

The virtual water trade is emptying the Colorado River and the Rio Grande, which both now fail to reach the ocean for much of the year. Exporting water is sucking dry what was once the country's largest underground water reserve, the Ogallala aquifer beneath the high plains of the Midwest. The Ogallala is being depleted faster than it can be replenished by rain.

It's not just environmentalists and conservationists who are concerned about water footprints and water scarcity. Large companies such as Unilever and Coca-Cola are looking at how big their corporate water footprints are and where they fall. The World Business Council for Sustainable Development has an online global water tool that allows companies to calculate their water consumption and efficiency and to identify water-related risks in regions around the world where they conduct manufacturing operations.

With big corporations getting on the blue bandwagon, we can hope that the global trade in virtual water will become fairer to the countries most affected by water scarcity. Perhaps we can also expect that sensible trade policies will emerge that promote the export of water-intensive products from water-rich regions to regions that can't grow or produce them. In the meantime, we can all start thinking about the virtual water we consume and make choices that don't wring the land dry. **i**

### Measure Your Footprints

**Carbon Footprint**  
[www.nature.org/initiatives/climate-change/calculator](http://www.nature.org/initiatives/climate-change/calculator)

**Ecological Footprint**  
[www.footprintnet.org](http://www.footprintnet.org)

**Water Footprint**  
[www.waterfootprint.org](http://www.waterfootprint.org)

