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# H<sub>2</sub>Odear

by Sue White

**As petrol prices soar above \$1.50 a litre, most of us fail to realise we spend more than this to buy bottled water when we could drink from a tap for free.**

**S**ettling down to dine at a high-end restaurant earlier this year, the contrast between the luxurious surrounds and my usual eateries (local Thai) was profound. Strolling past the artwork and sliding into a well-appointed booth overlooking lush tropical gardens, my carefully cultivated façade, (“fine dining, phoey, it’s nothing”) seemed to be working like a charm. That is, until the drinks waiter approached.

“What type of water would you like?” he enquired politely, proffering an extensive menu of exotic hydration options from across the globe.

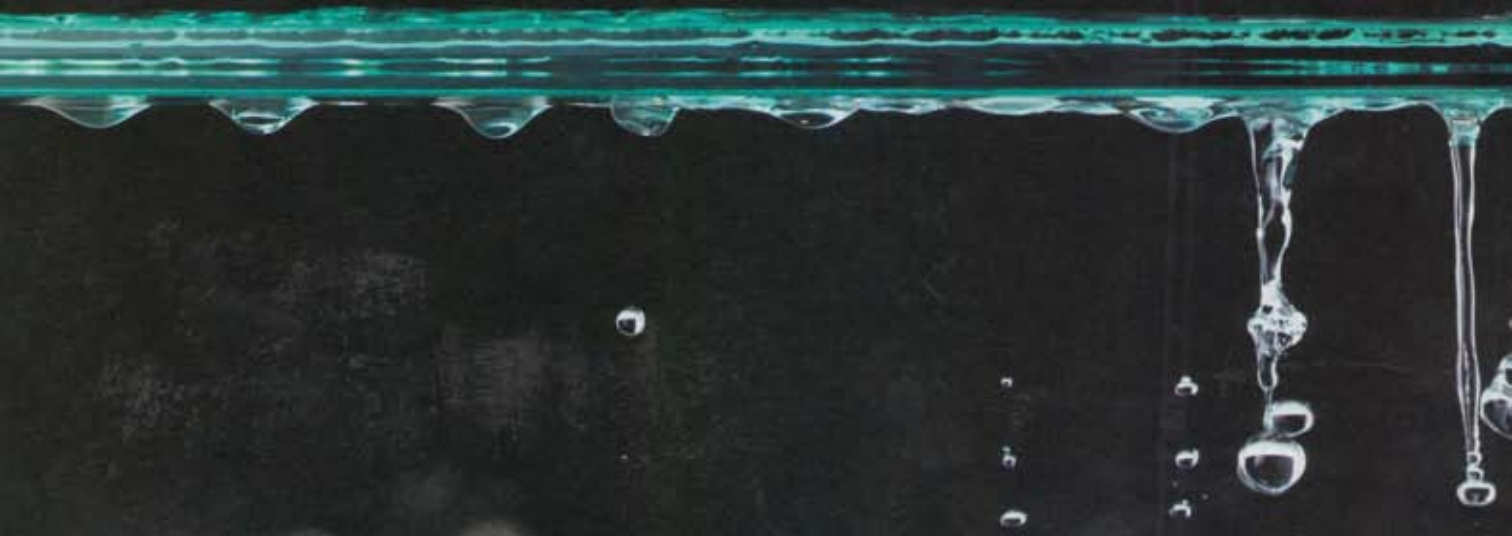
The façade dropped, as the real me experienced a bolt of shock. As my eyes scanned past prices of \$8, \$9, \$12 for a vessel of water from some of the world’s highest, snowiest, or simply most exotic-sounding locales, I was rendered incapable of speech. Sensing a faux pas in the making, my dining companion took over: “I think we’ll be fine with Evian,” she nodded crisply, passing the menu to the waiter as I fanned myself back to life.

Later that evening, turning on the tap at home for a late night drink, I still felt ripped off. According to Clean Up Australia’s figures, I was: if you spent \$2.50 on a 600 mL bottle of water and drank it, you could refill that bottle once a day for a staggering eight and a half years with tap water before it cost you \$2.50.

I’m not the only one who has noticed that good old H<sub>2</sub>O has had an extreme makeover. Around the world, people are screwing up their noses at turning on the tap; we now prefer our water packaged, labelled and, most importantly, branded.

With annual global sales estimated at \$60 billion worldwide (\$385 million in Australian retail last year alone), the bottled water industry has been booming for the last 10 to 15 years. The modern boom seems to have begun in the 1970s and 1980s – a time when individuals became increasingly obsessed with their personal wellbeing.

According to a report by the UK’s alliance for better food and farming, Sustain, global sales of bottled water increased by almost 250 per cent between 1994 and 2002. »





GETTY IMAGES

**The 250 million litres of bottled water drunk by Australians in 2006 took a whopping 456,1312 barrels of oil to package.**

» With more than 30 brands easily available to most Australian consumers, there's scope for every one of us to become a bottled water connoisseur. Sydney's Four Seasons Hotel is catering to this trend by introducing a water menu in its Kable restaurant, with detailed descriptions of 20 varieties on offer.

But before you lift your next bottle to your lips, it's worth unscrewing the lid on this modern mega-industry: how does it affect our environment, our health and our wallet?

### Could oil and water actually mix?

While it's unlikely we kid ourselves that bottled water is environmentally advantageous, most of us are still missing the connection between bottled water and two of today's biggest environmental concerns: oil and carbon emissions.

Typically, bottled water is sold in soft plastic PET bottles. PET stands for polyethylene terephthalate, and it's made from two main ingredients: PTA (terephthalic acid) and MEG (monoethylene glycol), both derived from crude oil.

Our current thirst for bottled water is leaving an undeniably oily footprint: the 250 million litres of bottled

water drunk by Australians in 2006 took a whopping 456,131 barrels of oil to package, and according to the Department of Environment and Climate Change, created 60,000 tonnes of greenhouse emissions through production and transportation.

Of course, the further your bottle travels, the bigger its environmental footprint. According to the Australasian Bottled Water Institute, around five per cent of Australia's bottled water comes from overseas.

As environmental questions are bandied about, some imported brands are promoting their environmental credentials: Fiji Water, for example, has plans to become carbon negative by 2010. Although this goal may be commendable, it's hard to take seriously when considered along with their philosophy: "When it comes to drinking water, 'remote' happens to be very, very good."

'Remote' also happens to involve lots and lots of greenhouse emissions. While their defence that shipping is less environmentally problematic than air or land transport is correct, the emissions are still significantly higher than another option open to consumers: filling up from the tap. »

# The facts

- Worldwide, 2.5 million tonnes of plastic are used to bottle water each year.
- 1 L of Fiji Water sold in Australia releases 431 g of carbon dioxide in its manufacture and transport.
- PET bottles are 100 per cent recyclable and contain up to 30 per cent recycled post-consumer content.
- According to the ABS, 90 per cent of households in Australia reported recycling or reusing plastic bottles in 2006. Yet only 35 per cent of PET bottles are recycled overall. How come? Most PET bottles are purchased when people are out and about with nowhere to recycle the empty bottles.
- Worldwide, we drank 154 billion L of bottled water in 2004, up 57 percent from 1999.
- Only water sourced from an underground, water-bearing rock, with natural minerals, may be labelled as a natural mineral or spring water.
- Ranging from \$0.48 to \$4.39 per litre, bottled water is often more expensive than petrol.
- Mount Franklin uses about 1.3 L of water to make 1 L of bottled water, plus the water used to make the bottle.
- According to the Australasian Bottled Water Institute, in the last four years Australian bottlers have saved more than 60,000 tonnes of PET by "light-weighting" bottles, which means using less plastic.
- Some bottled water classified as 'purified water' is simply filtered tap water.



**G**  
**SPOT**

If you're on the go and buy a drink in a PET bottle, don't throw it away. Crush the empty bottle, take it home and add to your recyclables.

## But PET's recyclable, right?

Theoretically, yes, PET is 100 per cent recyclable. But only 35 per cent of Australia's plastic water bottles are currently recycled, according to the Australian Conservation Foundation. The rest end up as landfill or litter. Last year's Clean Up Australia campaign found 37,400 PET bottles in NSW alone, and noted this was a significant increase on previous years. According to Clean Up, South Australia's lower percentage of PET bottle litter is no coincidence: it is the only Australian state where consumers are able to return bottles for a small cash refund.

Although recycling and container deposit schemes aren't being touted as the only solution, environmental and consumer lobby groups, including the Australian Consumers' Association, the Bottled Water Alliance, the Australian Conservation Foundation and Clean Up Australia, believe they are a step in the right direction. If we insist on drinking from bottles, they say, we at least need public recycling facilities where we actually buy and consume the products.

## Watch your wallet

If there's one area where it's hard to argue any upside to bottled water, it must be price.

"Australians are keeping an eye on petrol prices, yet many fail to realise that they're spending even more on a litre of bottled water than a litre of petrol," said Clean Up Australia boss Ian Kiernan earlier this year.

Let's say you live in Melbourne. Turn on your kitchen tap and leave it running, and running, and running until you've chewed through 1,000 litres. Yes, 1,000 litres of water. The cost? A mere \$1.30.

Now head to your local convenience store. Your \$1.30 won't buy you even one bottle of Mount Franklin.

## But isn't bottled water healthier?

Environmental and nutritional toxicologist, Peter Dingle, from Murdoch University in Perth, says it's important to be clear about what you mean by bottled water when you're asking about its health impacts:

"There are two types. One is tap water that has been purified through carbon filters or reverse osmosis and is sold on the market as purified bottled water. The other type is 'real' mineral water."

According to Dingle, purified tap water has its pros and cons: "Filtering might get rid of some of the toxins found in water, like organochlorides...but you will take away some of the valuable nutrients too, like calcium and magnesium."

If you are worried about chlorine, leave a jug to stand around for a while; the chlorine will evaporate off.

Dingle says the price of purified water is ridiculous considering what you get: "I'd recommend drinking tap water, or water that's gone through a filter at home, where you can get a reverse osmosis system that will cost you just a few cents a litre."

But what Dingle calls 'real' mineral water is a different story. "Real mineral waters, like Perrier or Hepburn Spa, have a distinct health advantage, as they're quite rich in minerals that we often lose out of a diet high in processed foods.

For example, some of them have a reasonably high level of magnesium."

But these 'real' mineral waters make up a very small percentage of the bottled water sold, says Dingle:

"Most bottled water sold doesn't have a mineral content worth mentioning. So despite the fact that we're buying water for health reasons, it probably really has no real health advantage."

## Perhaps bottled water is safer?

In addition to the uncertainty about potential health benefits, there's no guarantee that bottled water will not make your health worse. Overseas, Coca-Cola Amatil took a battering over the recall of its Dasani bottled water, after it was found to contain higher than expected levels of a chemical called bromate, which is suspected of causing cancer.

Of course, tap water is not blameless in this regard. Bottled water is essential in many countries whose town supply is riddled with contaminants. Even here in Australia tap water has had its low points. Sydney's 1998 cryptosporidium and giardia scares made international headlines, as the water authorities asked residents to boil their tap water before drinking it to kill any potential nasties. The scare boosted bottled water sales enormously and raised questions about Australia's water quality. »

## HOW GOOD IS OUR TAP WATER?

Don Bursill knows more about the quality of Australia's water than most: he helped put together Australia's Drinking Water Guidelines and was appointed chair of the National Health and Medical Research Council's Water Quality Advisory Committee in 2007.

While the water that comes out of our taps is treated differently across Australia, he says there are a few general rules: "We usually need to use filtration, and may need to add some chemicals to deal with colour and turbidity [suspended particles such as algae]."

Disinfection to kill off micro-organisms happens across the board, he says: "The most common approach is chlorination, although other technologies are used. Then of course, fluoride is added in most cases as well."

Bursill says sophisticated technologies are often used to remove tastes or odours from our water. "Natural water is not completely tasteless and odourless; you just get used to your own system, so if you go to another city you're suddenly aware of the difference," he says. But he warns that funny-tasting water is not always the water itself: "A lot of the time it might be from old pipes leading into your house."

While Bursill is reluctant to 'rank' Australia's water quality, he believes it's up there with the world's best. The World Health Organisation obviously agree: they've been recommending our water quality management processes in their Guidelines for Drinking Water Quality since 2003.



» UK's Sustain, the US's Polaris Institute, and *Bottlemania* author Elizabeth Royte are just some who believe that the beverage industry's insistence that bottled is safer and cleaner is eroding confidence in perfectly good public water systems.

## EASY ALTERNATIVES TO BOTTLED WATER

There are myriad ways to enjoy water on the go:

### REUSABLE BOTTLES

SIGG is one of the established brands on the market. With over 100 designs, every part (think lids, seals, nozzles) is both recyclable and interchangeable between designs. Aluminum SIGGs are lined with a non-leaching interior that importer Fritz Voser says is a "trade secret". But, he adds, "It doesn't leach and most importantly, doesn't contain harmful BPA's." Priced from \$26.50 to \$39.95. For stockists call 03 8742 3322 or email [salesvic@swissimport.com.au](mailto:salesvic@swissimport.com.au).

### ROLL-UP BOTTLE

Platypus Bottles weigh 80 per cent less than a conventional plastic bottle. They're made from a material that's free of BPA's, tough but thin and flexible, so you can roll up your 'bottle' when it's empty. Priced from \$6.95. Order direct from [www.platypushydration.com](http://www.platypushydration.com) or check your local outdoors store.

### HOME AND OFFICE WATER FILTERS

If you're worried about what's in tap water, filter it yourself for a fraction of the price. Having a filter installed costs between \$180 and \$445; in-jug filtration starts at \$27.

See [www.waterpeople.com.au](http://www.waterpeople.com.au), [www.culliganwater.com.au](http://www.culliganwater.com.au) or [www.brita.com.au](http://www.brita.com.au) for more information.

### BUBBLE AWAY

Find a bubbler (remember them?) If they don't exist, write to your council asking for new, clean ones.

### BE A TRADITIONALIST

Grab a glass, walk towards a tap, stick the glass underneath and fill it up. It's clean, it's cheap and it's an environmentally sound decision.



Australian Conservation Foundation's Elle Morrell says our water systems are reliable. "We have some of the best tap water in the world," she says, noting, however, that the quality does vary from state to state: "In Victoria, the quality is very good as the native forests around the catchment areas are protected, which is something we would encourage."

## The perils of plastic

As with all products packaged in plastic, there's debate over whether chemicals leach into the product itself. When it comes to water, the chemicals most focussed on are BPA (bisphenol A) and phthalates.

BPA's, found in hard plastic bottles, like the ones you buy in camping stores, have been labelled as potentially harmful by the US National Toxicology Program and Health Canada. Investigations into BPA's and plastics are one reason you now see some suppliers of hard water bottles touting their products' BPA-free status.

Phthalates are suspected of disrupting the endocrine system in the human body, and have been linked by some studies in animals to birth defects and the early onset of puberty. Whether phthalates leak into the water in your PET bottle is a matter of opinion. Most experts agree a single use is OK (for you – not the environment!), but if you're reusing your bottle until it becomes old and worn, the jury is still out.

For Dingle, the answer is simple: "Plastics coming into contact with food (not just water) is an issue, and bottled water is an added source of it that is easy to remove."

## Perhaps bottled tastes better?

But at least bottled water tastes better, right? Not so, says almost every taste test you can get your hands on. While many consumers claim to prefer the taste of bottle to tap, results of taste tests indicate it may be the marketing that sways us. In 2005 the Australian Consumers' Association ran a taste test of Mount Franklin, Frantelle and Sydney tap water. Tasters couldn't tell the difference, and it's a similar story in tests across the globe.

So if, with few exceptions, it's not healthier or safer, is environmentally unsound, costs a bomb, and tastes basically the same, why exactly are we buying bottled water?

Posing the question to authors, environmentalists and researchers elicits the same response: the power of marketing. It's all in the brand.

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**PLANET ARK**



In *Bottlemania*, Elizabeth Royte suggests that the success of the bottled water industry is one of the greatest marketing coups of the 20th and 21st centuries, with companies such as Coca-Cola Amatil, PepsiCo, Cadbury Schweppes and Nestlé selling dozens of brands of bottled water across the globe.

Tap water, on the other hand, has no 'label' attached, and this brandlessness leads people to devalue it, suggests Deakin University marketing lecturer Paul Harrison:

"Water from your own tap just doesn't have branding attached, and any pricing is a bit distant." »

**G**  
**SPOT**

Got a spare 13 minutes? Head to YouTube for Penn and Teller's video "The Truth About Bottled Water". Their expose on taste testing is both cringeworthy and comedic.

## GLASS vs PET: AND THE WINNER IS ... GLASS

Should you find yourself in dire need of a drink and there's no tap in sight, is it better to choose the glass or the plastic bottle? For the purpose of comparison, we weighed an empty 500 mL glass bottle of San Pellegrino and an empty 500 mL PET bottle of Aqua Pura VitaminH2O. The glass bottle weighs 290 g and the plastic one 50 g. Since we were interested in the relative merits of the materials only, in this comparison we've disregarded the fact that the San Pellegrino is an imported product while Aqua Pura is bottled in South Australia.

We've based our calculations on lifecycle analysis figures from US environmental engineer Pablo Paster.

According to Paster, the manufacture of glass requires 17.1 g of water per gram of glass. PET is far thirstier, requiring 294.4 g/g. This means that, despite weighing far less, the PET bottle uses almost three times as much water (close to 15 L) to produce than the glass bottle (close to 5 L).

In terms of the release of greenhouse gases during production, the PET bottle nudges in front of the glass, with 186 g compared to 208 g. In addition, because the glass bottles weigh so much more, it takes more petrol to transport the glass bottles to the shops that sell them, creating more greenhouse gas emissions.

When it comes to consumption of raw materials, the PET bottle appears to be a clear winner, using less than a quarter of the minerals and fossil fuels that the glass bottle does.

However, this last figure needs to be taken with a grain of salt, as glass can be continually melted down and reused with no loss of quality, greatly reducing the need to extract new materials from the Earth. In contrast, PET bottles in Australia contain up to 30 per cent post-consumer recycled plastic, but the rest is virgin plastic.

So when you can't find a tap, grab some water in a glass bottle, taking comfort in the fact that it uses far less water to produce the container, and uses less material than plastic in the long run. Just make sure you throw it in the recycling bin when you're done. — Megan Vigus



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» "It's not just about buying water now; it's about buying a particular type of water: one company may have four or five different brands and somehow convince us they are somehow different from one another."

Coca-Cola Amatil is one case in point. As well as producing Australia's highest selling retail bottled water (Mount Franklin) they sell Pump (with a 'sports' look), Peats Ridge water and Neverfail, the highest selling office-based water product, among others.

For years we've used brands to 'say' something about the type of person we are, and bottled water is no different, says Harrison. "We're not as rational – or as resistant – as we'd like to think. Most of the time when you question people why they buy bottled water, they say something like 'convenience'; but really, it's become a social norm to have a bottle of water with you that sends a particular signal out to a social group."

Gay Hawkins from the University of NSW's School of English, Media and Performing Arts says while the beverage companies are certainly engaging in aggressive marketing techniques, it takes two to tango: "What the bottle companies are exploiting is a general concern about risk: is tap water safe; is bottled water healthier? Over the last 30 years the risk culture has really escalated: people now feel vulnerable about almost anything," she says.

Hawkins, who recently began a three-year international study on "the social and material life of water bottles", wonders what role bottled water will play in our future.

"Look around, everyone's carrying a bottle; it's an extraordinary transformation in the last 10 years. It says a lot

about plastics, water futures, the legal rights surrounding access to water, and issues of health. That bottle stands for so many important questions around the politics of life."

But in the politics of bottled water, a backlash is starting to emerge.

Overseas utilities companies were amongst the first to fight back. In Paris, the city's water was re-branded as Eau de Paris, with restaurants given Pierre Cardin-designed carafes to entice Parisians back to tap.

The campaign was so successful that London is now planning its own program: London on Tap.

In the US, many local governments are banning bottled water at official functions and in their offices: the movement, which began in San Francisco last year, has gained endorsement from mayors in New York, Seattle and cities across North America.

In Australia, the Department of Environment and Climate Change has stopped supplying bottled water in their 120 offices, the Victorian government is encouraging tap, and Manly Council has led others in NSW by banning the bottle in offices and at functions.

Some celebrities are even changing their tune: while Madonna once sent sales of Evian soaring by adopting it as her brand of preference (after fellingating a bottle of it in her *Truth or Dare* documentary), today Cindy Crawford more demurely endorses a water filtration company.

The response from beverage companies has been an increased focus on 'greening up' their public presence. We're already seeing Landcare partner with Mount Franklin for tree planting; PepsiCo donate to Matt Damon's African clean water campaign in exchange for his endorsement of Starbucks' Ethos Water; and Fiji Water claims that drinking its product will help the environment because it offsets more carbon than it takes to create the water. Expect it to escalate. There are murmurs that Coca-Cola Amatil's own 'ethical water' brand will soon hit the market.

As they cry "greenwash alert", activists at sites such as [www.turntotap.com](http://www.turntotap.com), [www.insidethebottle.org](http://www.insidethebottle.org) and [www.bottledwateralliance.com](http://www.bottledwateralliance.com) are hoping that consumers see through the hype, and soon.

That way, the next time you're presented with a smorgasbord of bottled waters, you'll be confident enough to respond in the most rational, environmentally sound and economic manner: "No, thanks, I'll take tap." G

SUE WHITE is a freelance writer who has overcome her intimidation at requesting tap water in fine dining establishments.



COBURN, PHOTOGRAPHY

## IF YOU MUST BUY BOTTLED

**RECYCLE** – Don't let yours be one of the 65 per cent of PET bottles that end up as landfill or litter.

**BE AWARE** – Where does it come from? The further away the water is bottled, the higher the 'water miles' attached. Consider switching to a local option.

**BUY UNREFRIGERATED** – If you aren't drinking it on the spot, keeping the bottle cool simply wastes more resources.

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