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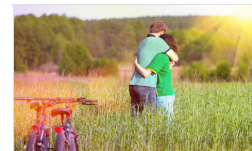
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Preserving Our Planet One Flush at a Time

[Editor Post](#) | May 29, 2014 | [0 Comments](#)



By **Mark Nelson**

Planet Earth is two-thirds ocean. As the great inventor and thinker R. Buckminster Fuller noted, it should really be called Planet Ocean.

However, 97% of our planet's water is salty and not suitable for drinking or for irrigation. Potable water is a precious and scarce resource—one that we so casually flush down the toilet every day.

Human waste is not a toxic waste product and should not be treated as if it were. Throwing away vast amounts of potable water is increasingly untenable in a world facing a shortage of fresh water. Solutions to health and fresh water issues in the developing world do not have to replicate the energy consuming, wasteful "modern" technologies which we've adopted in Western countries.

The costs of building and maintaining centralized sewage treatment plants are not only enormous, the world's supply of freshwater will not permit extending these wasteful practices even to the world's *current* population. Freshwater shortages and increasing water pollution are making it clear that developed countries too cannot afford to continue such practices indefinitely.

While some praise indoor plumbing and the flush toilet as sterling achievements, for others, it is the height of insanity to use drinking water to dispose of human waste and then wash it away into large bodies of water, spreading the potential for pollution of all Earth's water bodies. Wastewater contains valuable nutrients – nitrogen, phosphorus etc – so we are also wasting precious resources which originally came from the soils where our food is grown.

This helped inspire me to find some alternative approaches. One of the technologies that I've worked with are called "constructed wetlands." I spent two years inside Biosphere 2 researching constructed wetlands, which treated all our sewage and returned our nutrients to our mini-farm.

I call my systems "Wastewater Gardens" (www.wastewatergardens.com) because they aim for beauty, high species diversity and inclusion of valuable, harvestable plants.

They're called "subsurface flow" constructed wetlands and because the wastewater is kept beneath a dry layer of gravel (with tight covers on septic tanks and control boxes), there is no malodor or fear of accidental contact. This approach can be scaled from individual houses to hotels and businesses to towns and cities—they simply require land available for greening. Suitable plants can be found in every climate and region. We design to maximize productive use of both the wastewater and the nutrients contained, so the treated wastewater is used for subsoil irrigation, creating green landscapes.

My thirty years of experience in waste recycling and soil-regeneration enterprises around the world has led me to some suggestions and conclusions. I see them as rational ways of managing what I call the "fecosphere." Some can be implemented by individuals, others will require the re-engineering of various support technologies and infrastructure.

We built them, so we can redesign them. It isn't rocket science.

1. Separate waste from the water cycle wherever possible. This can be done at the source, by means of composting toilets, or at the end, by sending wastewater through zero-discharge reuse and recycling systems.
2. Use water of the appropriate quality, according to need. That means clean, potable water should be prioritized for drinking, cooking, and bathing. Irrigation water should be water of a lower quality for example, unpurified groundwater or surface water or appropriately treated and managed graywater.
3. Conserve water by installing low-water-use appliances (washing machines, toilets, showers, etc.) and by irrigating using water-efficient methods such as drip irrigation or subsurface irrigation, lessening evapotranspiration.
4. Use wastewater to create green belts around cities and to landscape at the smaller septic tank house or small community scale.
5. Treat and reuse human waste locally wherever possible. Centralized sewage treatment is very costly and makes more difficult the greening, recycling use of wastewater since much larger quantities of wastewater are now concentrated in one place. Wastewater recycling and redistribution should be decentralized, minimizing infrastructure and energy costs.
6. Do not mix industrial waste with residential waste. Detoxify the former before any possible recycling. Just as residential wastewater can be treated and recycled as close to its source as possible, so should industry be responsible for cleaning up and recycling its wastewater at its source. If industry had to pay for the downstream costs of wastewater pollution, there would be economic incentives to use less toxic products, to develop methods for detoxifying ones that have no substitutes, and to recycle rather than dispose of wastewater.
7. Send the sludge and compost made from human waste back to the land in an economical way. If necessary, add the real cost of returning waste to the land as a previously unaccounted cost of agriculture and of restoring and maintaining the health and productivity of our soils.

I once heard a Buddhist meditation teacher say that a really good way of transforming the irritation we feel when we're stuck in traffic or waiting for a traffic light to change is to practice *mindfulness*, the transformation of negative emotions by means of meditation. The teacher contrasted this to the "California approach," where everything must be perfect: subtle lighting, soft cushions, a beautiful setting, and complete quiet. The problem with that approach is that real life, our life, does not nor will it ever take place in a "perfect" environment. One needs to find a way to still the mind and create a circle of self-awareness even when all hell is breaking loose around us.

I would therefore like to add a fecosphere meditation. Each time you go to the toilet to take a dump, be *mindful* of what you are doing. "Where does my water come from?" "Where does my poop go?" Then perhaps, investigate, find out. You will be way more connected to reality by trying this simple meditation, and you'll come to understand how life on this planet is indeed sustained. Then ask: "How can I make this activity healthier for my local ecosystem and indeed the biosphere?" "How can I change the world?"

The answer is not in the glorious, perfected hereafter ("There'll be pie in the sky when you die") but right now, beginning with understanding the "travel itinerary" of your poop.

How do we change the world, help create the earth we want and need?

No action is trivial or unimportant.

We change the world one small step at a time, one flush at a time.

Mark Nelson, Ph.D., is an eco-system engineer and researcher. He is Chairman and CEO of the Institute of Ecotechnics (www.ecotechnics.edu). His Wastewater Gardens projects have taken him to the coast of Yucatan, Mexico; the high desert grassland south of Santa Fe, New Mexico; the semi-arid tropical savannah of West Australia; the resorts of Bali; and most recently, the deserts of Iraq. He is the author of *The Wastewater Gardener: Preserving the Planet One Flush at a Time* (Synergetic Press, June 2014).

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