

Our Waste Could Help Reverse Climate Change

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If California funds new composting facilities, more cities could divert waste, more farmers and ranchers would have access to compost and more rangeland could be covered. (Courtesy photo)

By [Robyn Purchia](#)

A few years ago, on a ranch in the small Marin town of Nicasio, a series of events led to an important environmental discovery. Scientists found that a single application of compost on rangeland helps plants suck carbon from the air and store it in the ground. Compost on less than three acres can offset carbon emissions from four diesel truck trips from San Francisco to Washington, D.C. If compost were applied to the millions of acres of rangeland in California, the effect would be monumental.

I'm used to grim news about climate change, so when I met John Wick, the owner of the ranch and co-founder of the Marin Carbon Project, I felt tempered excitement. There is still a lot to do before climate change is reversed. If California funds new composting facilities — something the Legislature is currently considering — more cities could divert waste, more farmers and ranchers would have access to compost and more rangeland could be covered.

But San Francisco already has facilities. How are we helping the Marin Carbon Project scale up now?

Married to Peggy Rathmann, author of the popular children's book "Good night, Gorilla" and heiress to a biotech fortune, Wick has the drive and means to further environmental causes. Before starting the Marin Carbon Project with rangeland ecologist Dr. Jeffrey Creque in 2008, the two men collaborated on a grazing effort to save the ranch from a weed infestation and convert it into native plant habitat for ground-nesting birds. When Creque noticed their effort affected carbon in the soil, Wick convened world-renowned scientists to take a look.

They now have approximately 20 published scientific papers with insights into how these soil systems function. Experiments show similar carbon storage results in different locations and under different grazing pressures. According to studies, one application of compost has the same effect every year, potentially for decades. Compost also enhances plant growth and water-holding capacity in the soil — a huge plus for ranchers and farmers in water-starved California.

Wick calls it "a game changer," and I agree.

Of course, applying a soil amendment to ranches and farms isn't a totally novel idea. Many ranchers stimulate plant growth and keep soil wet with manure from slurry ponds. But this method produces nitrous oxide — a significantly more powerful greenhouse gas than carbon dioxide. Manure also runs off the land and can contaminate water.

Compost doesn't have these problems. In fact, even considering transportation emissions, the benefits of diverting waste from landfills and using it on ranches and farms makes compost a better environmental choice than manure. But the greatest benefits are achieved near urban centers with large amounts of organic waste. This is why San Francisco's participation in the Marin Carbon Project's work is vital.

I was told both The City's Department of Environment and the Public Utilities Commission are talking with the organization. Collaboration could include providing compost and biosolids derived from wastewater treatment. These partnerships would fit within San Francisco's climate strategy, which calls for diverting waste from landfills and finding ways to put carbon back in the ground. It would also serve as a model for other municipalities, like Los Angeles and San Jose, which have expressed interest in the Marin Carbon Project, too.

"San Francisco, like others, is advancing strategies to have no net impact. We're also being bigger and bolder by saying let's see if we can provide a net climate benefit through sequestration," Tyrone Jue, senior advisor on the environment to Mayor Ed Lee, told me. "Let's not just slow down the effects of climate change. Let's see how we can reverse it together."

Reversing climate change is key. Solar panels and Teslas may offset some carbon emissions from today's hamburgers and gas-guzzling Ubers, but they won't reverse past damage. Providing more waste to northern California farmers and ranchers would help stave off a change that threatens San Francisco's — and the world's — future.

Robyn Purchia is an environmental attorney, environmental blogger and environmental activist who hikes, gardens and tree hugs in her spare time.
