

Sustainable Living: Dirt-poor

by Shawn Dell Joyce

My young son likes to sing at the top of his lungs: "Dirt, you made my lunch! Thank you, dirt! Thanks a bunch!"

How poignant that this boy gets what so many of us adults are missing: a basic understanding that we owe our very existence — the food we eat, the clothes we wear, and the air we breathe — to dirt!

"One heaping tablespoon of dirt contains more microorganisms than there are people on the planet," points out author Harvey Blatt in "America's Environmental Report Card." American soils are losing their fertility at an alarming rate because chemicals in the soil are killing soil microbes. One heaping tablespoon of the stuff contains more microorganisms than there are people on the planet, points out author Harvey Blatt in "America's Environmental Report Card." Those soil microbes are critically important for healthy plants and crops, which in turn are critically important for healthy humans and other species. Also contained in that tablespoon are the minerals and organic matter that take carbon from the atmosphere and "fix it" into the soil, helping to store moisture and carbon safely in the soil.

In our culture, "dirt" is a derogatory term, for instance, "dirt-poor," "dirty" and "soiled." Yet if we look back to the Dust Bowl during the 1930s, we see how important dirt really is. In the 1930s, the prairie grasses were plowed under to grow crops. After several years of intense drought, the soils dried out, and no crops or native grasses survived to hold the topsoil in place. Winds whipped the topsoil into huge dust storms, causing many families to become evacuees and causing the loss of more than 5 inches of topsoil from almost 10 million acres, according to the United Nations.

Five inches may not sound like much, but it takes nature up to 500 years to produce 1 inch of topsoil. We are depleting our topsoil at a rate 10 times greater than nature can replenish it, according to several studies. Topsoil loss is three times worse in heavily populated countries, such as China. Chinese topsoil can be found in Hawaii during the spring planting season. It's blown in the wind to the islands after tilling is done. African topsoil can be found in Brazil and Florida, according to a USDA report. American topsoil often winds up in our rivers and streams as silt. Many rivers are now brown from topsoil erosion, including the Hudson River, which is in my region.

Our diet and farming practices are the main culprits behind topsoil erosion. Corn is one of the most environmentally devastating crops to grow. The soil must be tilled, which it keeps it loose, dry and vulnerable to erosion. Most of this corn is fed to animals or shipped overseas. For every pound of beef (fed with corn), we lose 5 pounds of fertile topsoil, according to a Harvard School of Public Health study. This adds up to more than 2 million acres of topsoil lost every year. On top of this, we lose another million acres to urban sprawl.

"Land degradation and desertification may be regarded as the silent crisis of the world, a genuine threat to the future of humankind," says Andres Arnalds, assistant director of the Icelandic Soil Conservation Service. "Soil and vegetation is being lost at an alarming rate around the globe, which in turn has devastating effects on food production and accelerates climate change."

Soil impacts climate change by storing twice as much carbon as can be found in the atmosphere. Also, soil with organic matter in it holds moisture longer, so it needs less water for irrigation.

Already, 43 percent of the Earth's vegetated surface has been degraded by soil depletion, desertification and loss of forests, says author Dale Allen Pfeiffer in his book "Eating Fossil Fuels." Pfeiffer also notes that 10 million hectares of land are added to that figure every year as more lands become degraded. "At the same time, 5 million hectares must be added to feed the additional 84 million humans born each year," he adds. What will we do in 2050, when it's projected we'll have an additional 3 billion mouths to feed?

"The questions we must ask ourselves now are, how can we allow this to happen, and what can we do to prevent it?" Pfeiffer says. "Does our present lifestyle mean so much to us that we would subject ourselves and our children to this fast approaching tragedy simply for a few more years of conspicuous consumption?"

A highly effective tool to conserve topsoil is the Conservation Reserve Program, according to Lester Brown of the Earth Policies Institute. Under the program, farmers are paid to plant trees or "cover crops," such as clover, on highly erodible farmland. Reducing tillage is also encouraged. These techniques reduced U.S. topsoil loss from 3.1 billion tons in 1982 to 1.9 billion tons in 1997.

Here are a few things you can do to reduce topsoil loss:

• Compost fall leaves and vegetable trimmings. Use the compost to enrich the soil in your yard or garden.

• Eat only pasture-raised local meats and avoid corn-fed factory-farmed meats.

• Don't buy or support biofuels made from corn.

• Buy direct from small farmers, who are less likely to use large-scale cultivators.

• Teach your children to sing "Dirt Made My Lunch"!

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