



# COMPOST: Impacts More Than You Think

Composting is the aerobic decomposition of organic materials by microorganisms. It transforms raw materials—such as leaves, grass clippings, garden trimmings, food scraps, animal manure, and agricultural residues—into compost, a valuable earthy-smelling soil conditioner, teeming with life.

**One Person's Trash is...**  
...another's black gold.

Every year, U.S. landfills and trash incinerators receive **167 MILLION TONS** of garbage.

**> 50%** of typical municipal garbage set out at the curb is compostable.

Landfills and incinerators are dangerous. Every bag thrown out contributes to:



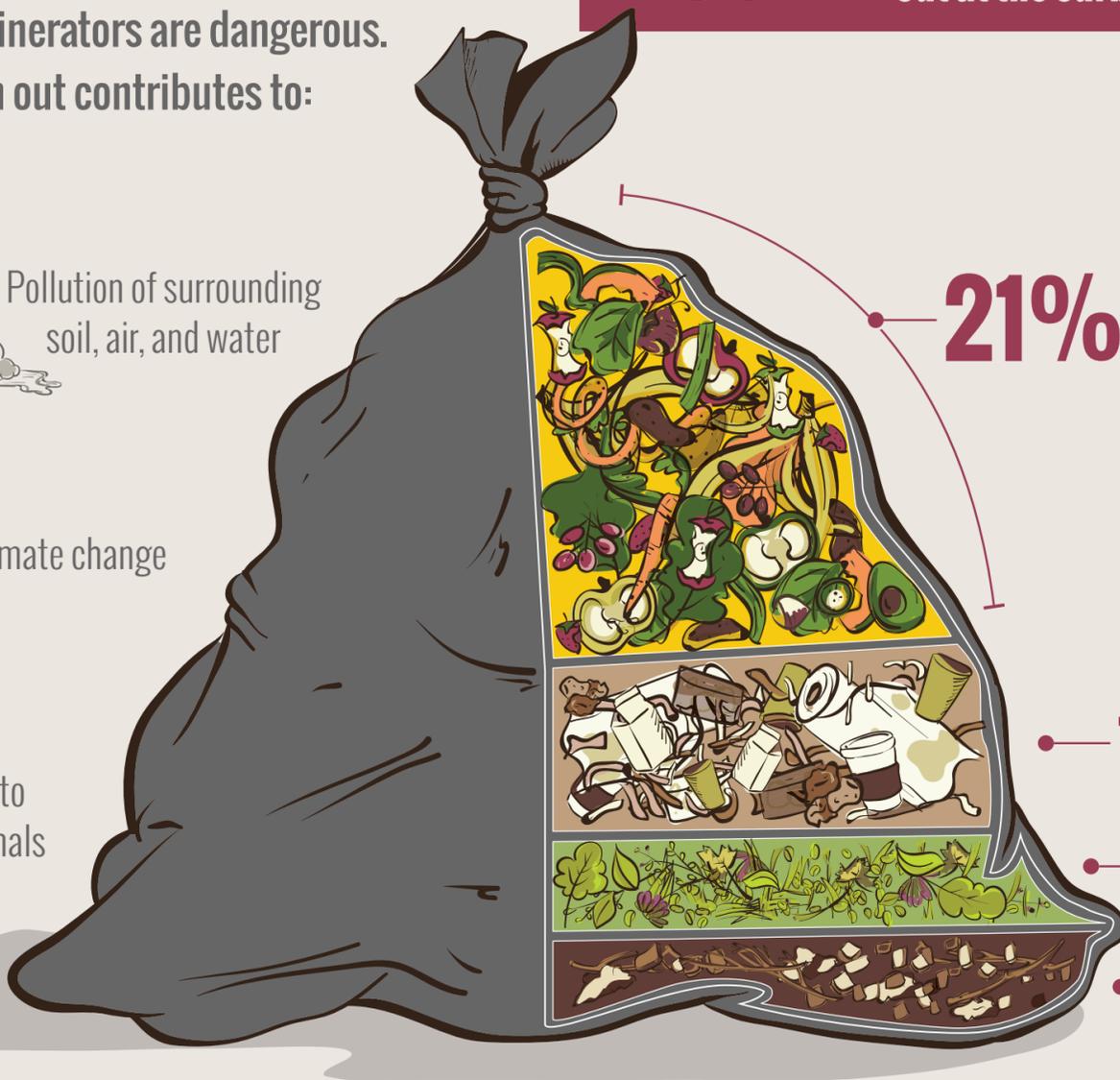
Pollution of surrounding soil, air, and water



Climate change



Health hazards to humans and animals



**21%** is food scraps alone

**15%** paper/paperboard

**8%** yard trimmings

**8%** wood waste

**SOURCES:**

Brenda Platt, Nora Goldstein, Craig Coker, and Sally Brown, *The State of Composting in the U.S.: What, Why, Where, & How*, Institute for Local Self-Reliance (ILSR), June 2015.  
 US EPA, *Advancing Sustainable Materials Management: Facts and Figures 2013*, June 2015, pp. 12, 46.  
 Brenda Platt, Eric Lombardi, and David Ciplet, *Stop Trashing the Climate*, Institute for Local Self-Reliance (ILSR), 2008.  
 Brenda Platt, Bobby Bell, and Cameron Harsh, *Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs & Protect the Bay*, Institute for Local Self-Reliance (ILSR), May 2013.  
 Mike Ewall, *Trash Incineration Factsheet*, Energy Justice Network web page, <http://www.energyjustice.net>, accessed April 2016.

# Composting Enhances Soil and Protects Watersheds

Healthy soils are essential for protecting watersheds. Compost is the best way to add organic matter—which is vital—to soils.

When added to soil, compost can filter out urban stormwater pollutants by an astounding **60-95%**



## IT'S ALL ABOUT THE SOIL

**COMPOST** improves biological, chemical, and physical characteristics of soil.

Protects against soil desertification and soil erosion

Enhances plant disease suppression

Increases resilience to floods and droughts

Increases soil fertility

Reduces need for chemicals

Converts nitrogen into a more stable and less mobile form and phosphorous into a less soluble form

Increases microbial activity

Improves water retention

Improves soil structure

Improves ability to store nutrients (such as cation exchange capacity)

Adds humus, keeping soil particles stuck together

Compost serves as a filter and sponge. It immobilizes and degrades pollutants, improving water quality.

Compost helps reduce stormwater runoff because it can hold **~5x its weight** in water.

### SOURCES:

Bobby Bell and Brenda Platt, *Building Healthy Soils with Compost to Protect Watersheds*, Institute for Local Self-Reliance (ILSR), June 2014.

Brenda Platt, Nora Goldstein, Craig Coker, and Sally Brown, *The State of Composting in the U.S.: What, Why, Where, & How*, Institute for Local Self-Reliance (ILSR), June 2015.

"Why Build Healthy Soil?" Washington Organic Recycling Council (WORC) Soils for Salmon Project, accessed April 2016.

United States Composting Council (USCC), "Specify and Use COMPOST for LEED & Sustainable Sites Projects: A Natural Connection"

"Soil Health Key Points," Natural Resources Conservation Service, USDA, February 2013.

"Increasing Soil Organic Matter with Compost," *Compost: The Sustainable Solution*, US Composting Council, July 2014.

"Strive for 5%," US Composting Council's campaign to promote 5% organic matter in soils, US Composting Council.

**ILSR** INSTITUTE FOR  
Local Self-Reliance

To learn more, visit: [ilsr.org/compost-impacts](http://ilsr.org/compost-impacts)

# Composting Protects the Climate

Food scraps in landfills generate methane, a greenhouse gas with a global warming potential 84x more potent than CO<sub>2</sub> in the short term.



Incinerators also emit climate pollutants



...but when converted into compost and applied to the land, compost sequesters carbon.



One research project found that ½ inch of compost applied to rangeland sequestered the equivalent of **1 metric ton of CO<sub>2</sub>e/hectare over three years.**

This level of sequestration on half of California's rangeland would offset **42 million metric tons of CO<sub>2</sub>e**, which is equal to the annual greenhouse emissions from California's commercial and residential energy sectors.

## SOURCES:

Gunnar Myhre, Drew Shindell, et. al, Anthropogenic & Natural Radiative Forcing, *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to Fifth Assessment Report of Intergovernmental Panel on Climate Change*, Cambridge University Press, 2013, p. 714.

"Can Land Management Enhance Soil Carbon Sequestration?" Marin Carbon Project web site, accessed April 2016.

Rebecca Ryals and Whendee L. Silver, "Effects of organic matter amendments on net primary productivity and greenhouse gas emissions in annual grasslands," *Ecological Applications* (Ecological Society of America), 1 January 2013, 23:46-59. doi:10.1890/12-0620.1

Brenda Platt, Nora Goldstein, Craig Coker, and Sally Brown, *The State of Composting in the U.S.: What, Why, Where, & How*, Institute for Local Self-Reliance (ILSR), June 2015.

Brenda Platt, Eric Lombardi, and David Ciplet, *Stop Trashing the Climate*, Institute for Local Self-Reliance (ILSR), 2008.

# Composting Creates Jobs

Jobs are sustained in each stage of the organics recovery cycle.

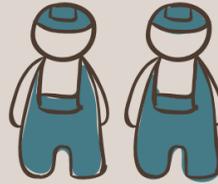
PER 10,000 TONS WASTE/YEAR

JOB SUSTAINED

Incineration

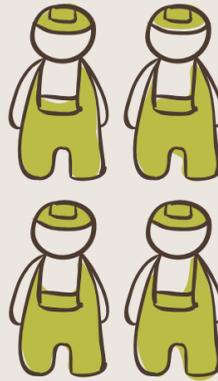


Landfilling

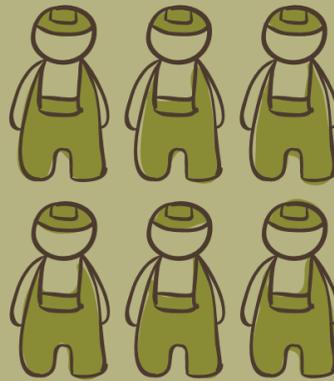


On a per-ton basis, making compost alone, employs 2x more workers than landfills and 4x more than incinerators.

Manufacturing Compost



**Green infrastructure** uses compost in rain gardens, green roofs, bioswales, vegetated retaining walls, and on steep highway embankments to control soil erosion and storm water. Using compost in green infrastructure creates **even more jobs.**



**SOURCES:**

Brenda Platt, Bobby Bell, and Cameron Harsh, *Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs & Protect the Bay*, Institute for Local Self-Reliance (ILSR), May 2013.

Brenda Platt, Nora Goldstein, Craig Coker, and Sally Brown, *The State of Composting in the U.S.: What, Why, Where, & How*, Institute for Local Self-Reliance (ILSR), June 2015.

Brenda Platt and Neil Seldman, *Wasting and Recycling in the United States 2000*, Institute for Local Self-Reliance (ILSR), 2000.

# What Can You Do?

## Policies to Consider

- ✓ Encourage a decentralized composting infrastructure
- ✓ Establish a 75% food recovery goal by 2030
- ✓ Ensure small-scale operators can compete
- ✓ Support master composter train-the-trainer programs
- ✓ Require compost-amended soil for disturbed land
- ✓ Implement a moratorium on new trash burners
- ✓ Institute pay-as-you-throw trash fees
- ✓ Ban yard trimmings and food scraps from landfills and incinerators
- ✓ Implement a healthy soils and green infrastructure initiative
- ✓ Provide grants, loans, and technical assistance to compost projects
- ✓ Establish performance-based standards for compost sites
- ✓ Support small facilities
- ✓ Implement a per-ton surcharge on all disposal facilities to fund composting

Learn how to compost at home and amend your soil with compost. Install a rain garden or bioswale. Advocate for policies and programs to expand composting. Promote school, garden, farm, and other community-based composting. A diverse and distributed infrastructure is needed! Get involved. Get your local farmers and elected, public works, parks, agricultural, and economic development officials involved. Make or buy compost!

◀ Local and state policies are needed to grow composting.