

Reducing the Impact of Wasted Food by Feeding the Soil and Composting

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Composting is the fifth tier of EPA's Food Recovery Hierarchy. Even when all actions have been taken to use your wasted food, certain inedible parts will still remain and can be turned into compost to feed and nourish the soil. Like yard waste, food waste scraps can also be composted. Composting these wastes creates a product that can be used to help improve soils, grow the next generation of crops, and improve water quality. Nationally, the composting of food rose from 1.84 million tons in 2013 (5.0 percent of food) to 2.6 million tons (6.3 percent of food) in 2017. In 2017, Americans recovered over 67.0 million tons of MSW through recycling, and almost 27 million tons through composting. This is 1.13 pounds per person per day for recycling and 0.45 pounds per person per day for composting. Food composting curbside collection programs served 6.1 million households in 2017.

What is Compost?

Gardeners and farmers add compost to soil to improve its physical properties. They may even use compost instead of soil to grow plants. Mature compost is a stable material with a content called humus that is dark brown or black and has a soil-like, earthy smell.

Compost is created by:

- Combining organic wastes, such as wasted food, yard trimmings, and manures, in the right ratios into piles, rows, or vessels.
- Adding bulking agents such as wood chips, as necessary to accelerate the breakdown of organic materials; and
- Allowing the finished material to fully stabilize and mature through a curing process.

Mature compost is created using high temperatures to destroy pathogens and weed seeds that natural decomposition does not destroy.

Benefits of Composting

There are a number of benefits to compost that not everyone is aware of. Some examples are listed below:

Additional Information

- Organic waste in landfills generates, methane, a potent greenhouse gas. By composting wasted food and other organics, methane emissions are significantly reduced.
- Compost reduces and in some cases eliminates the need for chemical fertilizers.
- Compost promotes higher yields of agricultural crops.
- Compost can help aid reforestation, wetlands restoration, and habitat revitalization efforts by improving contaminated, compacted, and marginal soils.
- Compost can be used to remediate soils contaminated by hazardous waste in a cost effective manner.
- Compost can provide cost savings over conventional soil, water and air pollution remediation technologies, where applicable.
- Compost enhances water retention in soils.
- Compost provides carbon sequestration.

Getting Started

It is important to know the composting process before beginning composting or starting a composting program.

- [Learn more about home or backyard composting.](#)

- [Find out more about composting for organizations, businesses and communities.](#)
- Explore EPA's [Managing and Transforming Waste Streams Tool](#) to identify over three dozen examples of real-life organics recycling programs and policies throughout the U.S. that communities can implement.
- Learn about compost-based [stormwater best management practices.](#)
- Locate a composting facility near you. [Findacomposter.com Exit](#) is a free directory of composting facilities throughout North America, created and managed by BioCycle magazine and sponsored by the Biodegradable Products Institute. You can use the searchable database to locate a composting facility near you, or add your composting facility to the database.
- Composting on Tribal Lands
 - Use EPA's [Tribal Green Building Toolkit](#) to integrate or improve on composting in your community. The Toolkit, made available to the public in 2015, is designed to help tribal officials, community members, planners, developers and architects develop and adopt building codes to support a variety of green building practices, including composting.
 - Read about how Tribal composting nourishes land and tradition in EPA's [Tribal Waste Journal](#). The Journal contains case studies of composting projects in different Tribal communities.
- Learn more about composting practices, benefits, marketing, policy and regulations by referring to [BioCycle Exit](#), which is an organics recycling magazine, and the [U.S. Composting Council Exit](#), which posts free articles and reports on composting.
- The Institute for Self-Reliance's July 2014 report, [Growing Local Fertility: A Guide to Community Composting Exit](#), describes successful community composting initiatives, their benefits, tips for replication, key start-up steps, and the need for private, public, and nonprofit sector support.

Composting Legal Basics for Businesses and Organizations

Landfill Bans on Organics

Some states have bans on landfill disposal of organic materials like wasted food. The U.S. Composting Council compiles [information on state compost regulations Exit](#).

Biosolids Composting and Use or Disposal of Sewage Sludge

The Clean Water Act covers land application, surface disposal, and combustion of biosolids sewage sludge as well as biosolids composting. EPA published federal standards for the use or disposal of sewage sludge, which can be found in [title 40 of the Code of Federal Regulations \(CFR\) in part 503](#). Many of the standards in this rule may apply to municipal solid waste compost. More information can be found on [EPA's Biosolids website](#).

Success Stories

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New Seasons Markets

New Seasons Markets operates 12 stores in the Pacific Northwest and strives to support the local economy and sustainable agriculture. Since 2006, New Seasons Market has increased diversion of organic materials, including food waste to compost by 109 percent. Since 2011, they have diverted more than 2,410 tons of food from landfills and saved more than \$25,000 in waste expenses. [Find out more in the case study](#) about New Seasons Market's food donation and composting initiatives.

Petco Park

Petco Park, home to the San Diego Padres, implemented a food composting program in 2005 helping the venue to save money on its trash disposal bills. In 2011, Petco Park diverted 164 tons from landfill, saving \$75,000 since 2005. [Learn more from the 2012 presentation on their efforts.](#)

Middlebury College

Middlebury College in Middlebury, Vermont initiated a food waste composting program in 1993. Middlebury College used to haul the food scraps offsite, but now have a site on campus where they compost 90 percent of the food waste generated or 370 tons in 2011. In 2011, Middlebury saved over \$100,000 in landfill fees by recycling and composting. [Learn more in this Biocycle article](#) Exit.

Sprouts Farmers Markets

Sprouts is committed to zero food waste, taking responsibility for preserving the resources that go into getting food from farm to store including the soil, water, packaging and transportation. To combat hunger and reduce food waste, in 2015, all Sprouts stores donated more than 14 million pounds of fresh food to local hunger relief agencies through their Food Rescue Program. Sprouts also diverted another 5.5 million pounds of food to composting facilities and to local farms to feed animals. By working with the EPA's Food Recovery Challenge and organizations like Feeding America, Sprouts is able to reduce the impact of hunger in their communities and contribute to a cleaner environment.

Pearl City High School

During the 2014 – 2015 school year, Special Education students at Pearl City High School in partnership with Mindy Jaffe, owner of Waikiki Worm Co., staffed wasted food collection

stations in the school cafeteria. Unconsumed food was separated from non-food waste, diverting the potentially-wasted food from the general school trash stream. The fruits, vegetables, and selected starches were fed to composting worms and the remaining wasted food was hot composted, creating nutrient rich, organic products used in gardens in the community. This initiative resulted in 34,635 pounds of cafeteria scraps being composted on site over the school year, and a 97.5 percent wasted food diversion rate overall.

Stormwater Best Management Practices

Compost-based stormwater best management practices (BMPs) combine two important EPA initiatives: Sustainable Materials Management (SMM) and National Pollutant Discharge Elimination System (NPDES) stormwater regulations. These compost-based BMPs, which include compost blankets, compost filter berms, and compost filter socks, provide particularly effective stormwater treatment when used in construction and post-construction stormwater BMPs.

Why Should You use Compost BMPs?

- Compost retains a large volume of water, thus helping to prevent/reduce erosion, reduce runoff, and establish vegetation.
- Compost improves downstream water quality by retaining pollutants such as heavy metals, nitrogen, phosphorus, oil and grease, fuels, herbicides, and pesticides.
- Nutrients and hydrocarbons adsorbed and/or trapped by compost are decomposed by naturally occurring microorganisms.
- Compost improves soil structure and nutrient content, which reduces the need for chemical fertilizers.
- Compost-based BMPs remove as much or more sediment from stormwater as a traditional perimeter.

What are the Compost BMPs?

The compost BMPs consist of three methods for using compost to improve water quality. These methods reduce the amount of stormwater that can enter waterways by increasing the amount of water that can infiltrate the soil. They do so through the creation of barriers that stop the water from flowing or cover the soil completely. The three compost BMPs include:

- [Compost blanket \(PDF\)](#) (6 pp, 887 K, [About PDF](#)): A layer of loosely applied compost that is placed on the soil in disturbed areas to control erosion and retain sediment resulting from sheet flow runoff. Compost blankets are used in place of sediment and erosion control tools such as mulch, netting, or chemical stabilization.
- [Compost filter sock \(PDF\)](#) (9 pp, 4.05 M, [About PDF](#)): A mesh tube filled with compost that is placed perpendicular to sheet flow runoff to control erosion and retain sediment in disturbed areas. The filter sock can be used in place of a sediment and erosion control tool such as a silt fence.

- **Compost filter berm:** A dike of compost that is placed perpendicular to sheet flow runoff to control erosion in disturbed areas and retain sediment. It can be used in place of a sediment and erosion control tool such as a silt fence. The base of the berm is generally twice the height of the berm.
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