



## Recycling Food Waste

### Did you know food waste is one of the largest components of our household waste?

According to a 2011 study<sup>1</sup> of Seattle residences with access to curbside recycling, food scraps accounted for roughly one third of household waste. The combination of residential and commercial waste is commonly referred to as municipal waste of which, according to the Environmental Protection Agency (EPA)<sup>2</sup>, food waste accounts for 15% of our country's municipal waste stream.

Did you know that food waste is a resource that can easily be recycled, composted, or repurposed? Continue reading to discover new ways to reduce food waste.

### What is the environmental impact of food waste?

Excess food waste contributes to overconsumption of fresh water and fossil fuel resources used in the growing, processing, transportation, and sale of the food we eat. The use of fossil fuels, along with methane and carbon dioxide emissions, created by decomposing food and animal waste, may have a lasting impact on global climate change.

Researchers estimate that 40% of the food available in the United States (US) is wasted and this waste accounts for more than 25% of the fresh water we use and 4% of our petroleum oil consumption.<sup>3</sup>

### What is the economic impact of food waste?

The avoidable food waste in the US, in 2009, had an estimated value of \$197.7 billion dollars, not including the cost of handling said waste, with 63% of the total cost occurring at the household level.<sup>4</sup> The cost of avoidable food waste generated in homes was estimated at roughly \$644 per person.<sup>4</sup>

### Methods to reduce food waste

- Donate excess, unwanted, edible food, to your local Food Bank or other charities
- Feed food waste to livestock (i.e. chickens, goats, and pigs)
- Convert waste into biofuel (fuel made from vegetable oils and animal fats)
- Compost food waste into a product that enriches the soil and fertilizes gardens
- Donate food waste to neighbors who compost or have livestock

### What is compost?

Backyard composting or worm composting is the process of recycling plants and plant-based-material back into a product that is a valuable component of the soil which provides nutrients to new plants. Compost is the final product of managed decomposition.

The management of composting is simple: the decomposer-organisms that make composting happen have three basic requirements: air, water, and food (kitchen scraps, leaves, grass clippings, or straw). Fresh air is delivered by turning the pile over (with a pitchfork, rake, or shovel) to expose the buried material to the air. Water the pile like you would a garden. Feed the pile leaves and straw along with kitchen scraps (otherwise it gets stinky). When the pile shrinks you know it's decomposing! The finished product looks nothing like the raw material (i.e. banana peels, leaves, and coffee filters) from which it originated.

### What is the value of composting?

Compost is commonly referred to as "black gold" in the agriculture community. Farmers and gardeners value compost because it enhances the soil's ability to grow healthy plants due to the nutrients it adds to the soil. Soil that is regularly mixed with compost becomes wonderfully dark and crumbly and often requires much less fertilizer compared to soil that has not yet benefited from regular helpings of compost.

### Why compost our food waste?

1. Composting diverts a substantial amount of household waste (up to a third) from our landfills.
2. It reduces green-house gases: when compostable food scraps and yard debris are sent to the landfill, not only are their valuable nutrients wasted, but they can cause environmental harm. In the landfill, organic materials decompose anaerobically (without oxygen), releasing methane, a greenhouse gas that is 23 times more potent than carbon dioxide. Landfills account for 34% of methane emissions in the United States.
3. It's good for the soil and gardens.
4. When added to the soil it energizes the soil food web, which is made up of microscopic bacteria, protozoa, and fungi, along with earthworms. Compost also helps soils retain moisture.
5. It improves the soil structure, porosity, and density, thus creating a better plant root environment.
6. Compost will improve the cation exchange capacity of soils, enabling them to retain nutrients longer. It will also allow crops to more effectively utilize nutrients, while reducing nutrient loss from leaching.

### How do I begin composting?

There are many books, websites, and YouTube videos (TED Talks) available to get you started.

#### Suggested Videos

- Everything You Know About Composting is Wrong by Mike McGrath at TEDxPhoenixville  
<https://www.youtube.com/watch?v=n9OhxKlrWwc>
- Our Fall/Winter Compost Pile: Ensuring A Steady Supply Of Free Compost  
<https://www.youtube.com/watch?v=nJAPNqIQwo>

#### Suggested Reading

Many books on composting are available at your local library. We recommend Mike McGrath's *Book of Composting*, it gives expert advice without a lot of technical jargon.

#### Suggested Websites

- EPA Composting At Home: <http://www2.epa.gov/recycle/composting-home>
- EPA Composting Guide: <http://www.epa.gov/waste/conserve/tools/greencapes/pubs/compost-guide.pdf>
- US Composting Council Home Composters: <http://compostingcouncil.org/home-composters/>

#### Alaska-Specific Composting Tips

Composting in Alaska: <http://www.uaf.edu/files/ces/publications-db/catalog/anr/HGA-01027.pdf>

### Commercial composting programs in Alaska

#### Fairbanks

Golden Heart Utilities uses biosolids (sterile human waste), woodchips, and compressed air to create compost year-round. <http://www.akwater.com/compost.shtml>

#### Anchorage

Alaska Waste accepts vegetable and fruit waste from local grocery stores and horse manure from Anchorage residents. Alaska Waste processes nearly 10 tons of organic waste a week.

<http://www.alaskawaste.net/composting.htm>

## Composting at the office

Two easy steps to setting up a composting system at your office:

### 1) Create a Management Team

The first step in taking on any endeavor at the office is to make sure that everyone is dedicated to the effort, especially those in authority. Discuss composting at a full staff meeting, and have buy-in from your office community. Once everyone is on board, create an Office Organics Team (OOT) to oversee the project. These individuals will be responsible for making sure the compost systems are running smoothly. Management is key.

### 2) Select which materials to collect and compost off site or on site

- Coffee grounds bucket  
Collecting old coffee grounds is the easiest collection method to start with. Keep a bucket with a lid near the coffee maker and simply dump the paper filter and grounds into the bucket. Create a schedule for coworkers to deliver the bucket of material to a home composter. Coffee Grounds are a great source of nitrogen, a vital component to growing plants.
- All food waste except meat and dairy  
Provide a bucket with a lid in the lunch room. Schedule coworkers to deliver material to a home composter. Management is important to make this a successful process.
- Compost on site  
If you have a dedicated team and yard space, use an outdoor bin. You will need leaves or straw in addition to food waste.

### Local organizations that compost

- Alaska Coffee Roasters save their grounds for Calypso Farm
- The Food Bank saves spoiled vegetables for local farmers with livestock.
- ABR Inc. has a lunchroom compost collection bucket for coworkers that compost at home.
- Providence Hospital sends leftovers to Street Outreach & Advocacy Program (SOAP), outreach for homeless teenagers.
- Joy Elementary collects lunch waste for composting.
- The staff at Cold Climate Housing Research Center composts food scraps and plant material for use in their green roof vegetable garden.

### Composting in the classroom

The following are guides and lesson plans that may be helpful for teachers, students, and parents wishing to begin composting in schools.

- Launching a compost program at your school
  - Composting at School. The ABCs of establishing an effective composting program at schools in Chittenden County, Vermont. <http://compostingcouncil.org/admin/wp-content/uploads/2013/04/Composting-at-School-0307.pdf>
- Youth groups
  - Composting: Wastes to Resources, A 4-H Leader's/Teacher's Guide, by Jean Bonhotal and Marianne Krasny and published by Cornell Cooperative. This guide is designed for adults or youth leaders that want to introduce composting projects to kids. <http://cwmi.css.cornell.edu/compostingwastestoresources.pdf>
- High school level
  - Composting in the Classroom: Scientific Inquiry for High School Students, by Nancy Trautmann and Marianne Krasny, is a comprehensive online guide for teachers interested in guiding composting research projects by high school students. <http://compost.css.cornell.edu/CIC.html>

### References

- <sup>1</sup> Seattle Public Utilities (2011). 2010 Residential Waste Stream Composition Study FINAL Report prepared by Cascadia Consulting Group, Inc. in cooperation with Seattle Public Utilities Staff.
- <sup>2</sup> EPA website, Municipal Solid Waste. <http://www.epa.gov/epawaste/nonhaz/municipal>. April, 2015.
- <sup>3</sup> Hall KD, Guo J, Dore M, Chow CC (2009). The Progressive Increase of Food Waste in America and Its Environmental Impact. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0007940>
- <sup>4</sup> Venkat, K. (2012) The Climate Change and Economic Impacts of Food Waste in the United States International Journal on Food System Dynamics 2 (4), 2011, 431-446.