Recycle with us today!
Grow with us tomorrow!

Kevin Anderson

A Problem????
What Happens to Soils and Soil Functions as We Turn Forests into Cities?

Source: Soils for Salmon
Changes to the Natural Environment

- 55-70% surface water runoff (carries pesticides, silt and animal waste)
- 15% surface water detained/infiltrated
- 15-30% evapotranspiration
- 0% rainfall detained

Source: Soils for Salmon
A Problem???
A Picture Of Our Waste Stream

• Landfills Are Challenged
  • Space Limited
  • 98% Of Food Waste Ends Up In Landfills
• Major Contributor To Greenhouse Gas
• At least 26% can be composted

Figure 6. Total MSW Generation (by Category), 2006
251 Million Tons (Before Recycling)
A Solution.....

Closed Loop!
Organic Materials
FRED PROJECT

FRED Project.net
Food Residual Environmental Diversion
Accepted materials list for FRED Project

Commercial Compost Collection

YES!

Food Scraps
- Meat, Poultry, Fish, Shellfish & Bones
- Egg & Dairy Products
- Table Scraps & Plate Scraping
- Fruit & Vegetables
- Bread, Dough, Pasta, Grains
- Coffee Grounds, Filters & Tea Bags

Food Soiled Paper
- Kitchen Paper Towels
- Uncoated Paper Take-Out Containers
- Pizza Delivery Boxes
- Paper Napkins
- Restroom Tissues & Paper Towels
- Waxed Cardboard & Paper
- Uncoated Paper Cups, Plates
  (No lids, straws or creamers)
- * Milk and Juice Cartons (milk carton graphics)

Plant & Wood Scraps
- Plants & Flowers (No flower pots)
- Wood Pallets & Crates (No wire)
- Landscape Vegetation (less than 4’ long & 4” diam.)

NO!

* Plastic Bags
* Plastic Tubs & Bottles
* Glass Bottles & Jars
* Metal
* Produce Baskets & Netting
* Burlap
* Plastic Wrap
* Cork
* Coated or Plastic Take-Out Containers
* Plastic Plates, Cups & Utensils
* Latex & Plastic Gloves
* Styrofoam
* Foil
* Wire & Rubber Bands
* Grease & Liquids
* Painted & Treated Wood
* Pet Waste
* Garbage & Hazardous Waste

(*These items are recyclable.)

Keep containers clean:
- Use paper bags, layered shredded paper, waxed cardboard boxes or approved compost bags (www.missouriorganic.com).
- Rinse containers frequently into the sanitary sewer.
- For a small fee you can obtain clean containers from Missouri Organic Recycling.

816-483-0908
www.missouriorganic.com
Missouri Organic

7700 E. 40 Hwy., Kansas City, MO 64129
kevin@missouriorganic.com
Collections scheduled up to 3 times per week
Collateral Benefits Of FRED

• Reduction in cost to maintain and operate compactor
• Cost avoidance from landfill tipping fees
• Eliminating the cost to maintain and operate food grinders, plumbing, and possible BOD loading fees
• Makes plastic food and other containers recyclable
• Helps manage food buying / ordering practices
• Reduces fly's and odors
The Process

Grinding is the first step in size reduction. Creating greater surface area for quicker and more efficient composting.
Windrows are built with the correct mix of carbon and nitrogen. Approximately 70% yard waste 30% food waste.

Liquid is added to achieve 50% to 60% moisture content.
The windrow turner is then used to mix, and aerate the compost rows. This is done at least 8 some times as many as 15 times in the 10-12 week compost process.
The Process

The compost process is monitored for temperatures, moisture, and oxygen content.
The Composting Process
(... it is an all natural process.)

Raw Organic Materials
- Grass Clippings
- Tree Trimmings
- Animal Manures
- Ground up Wood
- Food Waste

plus
Water, Oxygen, & Minerals

Finished Compost
- Stabilized Organic Matter
- Humus
- Humic Acids
- Microorganisms
- Micro-Nutrients

Source: University of Missouri
Pathogens and Weed Seed Destruction

- **High Temperatures** (above 131°F) are important in the manufacturing process, not only for confirming biological activity but to insure pathogen destruction. The primarily purpose of high temperatures is to insure **Public Health Safety** through Pathogen Destruction and as an added benefit, the destruction of **Weed Seeds**.
The Process

Compost is then screened to any size from 2 inch down to ¼ inch. Compost also goes through quality testing. Using the United States Composting Counsel STA program.
Final Product
Nature Wise Compost
Why Use Compost?
WHY?

• Improves soil structure
• Moisture management – Natures Sponge
• Modifies and stabilizes pH
• Increases cation exchange capacity
• Supplies organic matter
• Supplies nutrients
• Supplies soil bacteria
• Suppresses plant diseases
• Binds/degrades contaminants

• Why? Because it works!
“Daddy, which is this — soil or dirt?”
Dirt – Sand, Silt, & Clay

USDA Soil texture Triangle Diagram
Just add compost ...

Whenever possible use compost to amend the existing soil, as opposed to bringing in “top soil”.

Dirt
(Sand Silt & Clay)

Organic Matter (humus)
Nutrients
Micro-Nutrients
Macro-Organisms

= A Quality Growing Media

Soil!!
Magic of Compost

No Other Single Product has All Three Elements

- Root Proliferation
- Aeration
- Water Retention
- Water Infiltration and Transmission
- Erosion Prevention

Physical

Chemical

Biological

Soil Health

- Nutrient Retention and Slow-Release
- pH Buffering
- Energy Storage (C)
- Toxicity Prevention

- Pest Suppression
- N Mineralization
- Organic Material Decomposition
- Habitat Protection
This complex soil-food web is made up of microscopic creatures that are inter-dependent in creating plant health. It really IS a bug’s life under there! Therefore, when weed and feed products or pesticides are applied, these toxic chemicals kill off the good bugs along with the bad, and that harms the soil/food web, which in turn weakens the plants. Healthy soil ecosystems also create more oxygen and soil-borne nutrients, and help plants retain water, increasing resistance to drought and heat; all reasons why healthy plants and grasses are simply much better at fighting off infestations of bad bugs, and recover faster from pest problems. This kind of balanced ecosystem creates a place that pests and diseases are just not going to thrive in.
Dirt The Movie!

A story with heart and soil.

“THE FILM EXCELS!
It made me want to get my hands dirty.”
Tamara Krinsky, Documentary Magazine

dirt!
THE MOVIE
www.DirtTheMovie.org

WINNER
Best Documentary
Sundance Film Festival 2009

WINNER
Best Feature Documentary
Montclair Film Festival 2009

WINNER
Best Visual Science Communication
EnviroMedia 2009
Custom Soil mixes

Missouri Organic custom mixes soils based on a landscape architects specification.

- Green Roof Mixes
- Bio retention soils
- Planting beds
- Turf Establishment
- Slope stabilization
Organic Erosion control

- Filter Socks
- Inlet Socks
- Filter Rings
- Compost Berms
Compost blankets

Pictures provided by Filtrexx International
In Closing
Looking Towards The Future

• Take care of your soil “Its Alive!!!”
• Reduce the use of pesticides, herbicides, and synthetic fertilizers.
• Increase landfill diversion by recycling more Organic Waste, in turn making more compost! And SOIL!!
• Keep the yard waste out of Missouri and Kansas landfills
• Expanding on efficient energy production using Organics while still making compost!
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