Leftovers: the Forgotten Effects of a Good Life

Furman Engaged 2017

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Center for Sustainability

- 2007
  Southern Living model sustainable home
- 2008
  Renovated as campus center
  Farm established
- 2016
  Former President Shi and Dr. Angela Halfacre donate $500,000 to Fellows program.
\[ I = PAT \]

\[ \text{Impact} = \text{Population} + \text{Affluence} + \text{Technology} \]
As a university, try to minimize impact and promote a healthy relationship between university, outside community, and the natural world.
Furman Farm
Composting
Recycling
Bon Appetit
Zero-Waste Planning
Composting
Recycled
Bon Appetit
DISTRIBUTION
USE
DISPOSAL
LIFE CYCLE
RAW MATERIALS
MATERIAL PROCESSING
Bon Appétit Management Company

- They are our food service provider here at Furman!
- The chefs cook from scratch, including sauces, stocks, and soups.
- They are widely recognized as a pioneer in environmentally sound sourcing policies such as...
Bon Appetit’s Sustainable Initiatives

Farm to Fork

Locally Crafted

Low Carbon Lifestyle

Imperfectly Delicious Produce Program

Food Recovery with Loaves and Fishes
Farm to Fork

- Farm to Fork Criteria:
  - Small: farm must make $5 million or less in annual sales
  - Local: farm must be within 150 miles of the dining hall
  - Owner-Operated: owner must participate in day-to-day farming operations
- 20% of the ingredients must be from local vendors
- Midsize, Humane
  - Located within 500 miles of the kitchen
  - Owner-Operated
  - Have third-party humane certifications
- Fish to Fork
  - Based on small size, short distance, and traceability
Furman’s Farm to Fork Vendors

- **Hickory Nut Gap Farms**, Fairview NC... Meat, Pork
- **Natural Farms of the Carolinas**, Walhalla SC... Produce, Bass and Freshwater Prawns
- **Gruber Farms**, St. George SC... Produce
- **Greenbrier Farms**, Easley SC... Pork
- **Forx Farm**, Anderson SC... Cheese
- **Keegan Fillon Farms**, Walterboro SC... Poultry, Pork and Beef
- **Thicketty Mountain Farms**, Cowpens SC... Produce
Furman’s Farm to Fork Vendors (cont’d)

- Leopard Forest Coffee, Travelers Rest SC... Coffee
- King of Pops, Atlanta GA... Popsicles
- Carolina Classics Catfish, Ayden NC... Catfish
- Carolina Mountain Trout, Andrews NC... Rainbow trout
- Furman Farm... Produce
- Soon to come on board
  - Chattooga Belle Farm, Long Creek SC... Produce
  - Southern Oaks Creamery, Abbeville SC... Milk
Potential Farm to Fork Vendors
Locally Crafted

- Seeks to support small, locally owned artisans who use sustainable practices
- This includes snack foods, granola, frozen desserts, sushi, and baked goods
- The locally crafted product must meet the 3 F2F guidelines and meet 2 of the following 6 criteria:
  - Locally sourced
  - Responsibly sourced
  - Humanely sourced
  - Traditional artisan
  - Justice through ownership
  - Justice through training
Low Carbon Lifestyle

- Initially we created the Low Carbon Diet program in 2007
- We reduced the equivalent of 5 million pounds of carbon dioxide each month.
- So we moved towards the Low Carbon Lifestyle
- We consulted with food and climate change experts, from the Environmental Working Group to the Union of Concerned Scientists and Rainforest Alliance. We settled on these four focus areas:
  1. Preventing And Reducing Food Waste
  2. Prioritizing Plant-Based Proteins
  3. Decreasing Deforestation
  4. Trimming Transportation
1. Preventing And Reducing Food Waste

- **Source reduction in the kitchen:**
  - Using snout-to-tail and stem-to-root cooking techniques

- **Source reduction on the farm:**
  - Imperfectly Delicious Produce program,
    - Sourcing ‘ugly’ produce that would otherwise be left to rot in the fields or discarded in the processing plant.

- **Food recovery:**
  - We work with food banks and nonprofit organizations such as Loaves and Fishes to take excess, nutrient-dense food to food-insecure people.

- **Feeding animals and industrial uses:**
  - At some locations, we send scraps to Farm to Fork partners (for animal feed or composting)
  - Or we send waste fryer oil to biofuel processors.

- **Composting:**
  - We compost food waste at the Furman Farm!
Food Recovery Hierarchy

Most preferred

Source Reduction
Reduce the volume of surplus food generated

Feed Hungry People
Donate extra food to food banks, soup kitchens and shelters

Feed Animals
Divert food scraps to animal feed

Industrial Uses
Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy

Composting
Create a nutrient-rich soil amendment

Landfill/Incineration
Last resort to disposal

Least preferred

In BA kitchens
Loaves and Fishes
At the Furman Farm
2. Prioritizing Plant-Based Proteins

Serving reasonable, clearly defined portions of animal proteins based on U.S. Dietary Guidelines recommendations

Skewing the menu mix away from beef and cheese

Emphasizing plant-based proteins

Tracking the ounces of various proteins we serve per guest per meal period, to make sure we stay on target
3. Trimming Transportation

- Examining both distance traveled and, more critically, the mode of transportation when we’re making purchasing decisions in order to prioritize carbon-efficient transportation of food.
  - No air-freighted seafood
  - Restricting purchases of vegetables, meat, non-tropical fruit, and bottled water to North America
  - Encouraging purchases of seasonal and regional fruits and vegetables
  - Training chefs and managers how to prioritize tropical fruit that is typically boated or trucked versus air-freighted when needed
4. Decreasing Deforestation

Supporting sustainable forestry and agricultural management through our purchasing practices:

- Purchasing meat from North American farms and ranches (fed with U.S.-grown crops)
- Opting for paper products that are FSC Certified and/or made from recycled content
- Purchasing coffee from Certified Organic, shade-grown, Rainforest Alliance or Bird Friendly certified (by the Smithsonian Migratory Bird Center) farms
Are you concerned about climate change?

Well, now that you've changed your lightbulbs, it's time to change your lunch!

The food system is responsible for a third of global greenhouse gas emissions. Learn how to reduce your carbon "foodprint."

EatLowCarbon.org
Eating Low Carbon Tips

- You Bought It, You Eat It – Don't Waste Food
- Make "Seasonal and Regional" Your Food Mantra
- Mooooove Away From Beef and Cheese
- Stop Flying Fish and Fruit – Don't Buy Air-Freighted Food
- If it's Processed and Packaged, Skip It
Eat Low Carbon Day

- The food system is responsible for a \( \frac{1}{3} \) of global greenhouse gas emissions.

- A Low Carbon Diet refers to making food choices to reduce these emissions!

- It is a program to reduce our greenhouse gas emissions by 25% over five years, maintain lower emissions going forward, and to educate our staff and guests about how the food system contributes to climate change.

- When determining if a food is high or low carbon, we take into consideration the greenhouse gas emitted through its lifecycle, including materials used to grow it and the energy of transportation, processing, and cooking.
What we’re doing

- Friday, April 19th
- We aim to make everything as low carbon as possible on that day
- We will serve no red meat, no bananas, no cheese on the pizzas
- Demonstration about imperfectly delicious produce
- Free book drawing!
Each student wastes approximately 1/4lb of food per meal!

There's about 400 pounds of food waste per meal, per day! That's 1,200 lbs per day!
What is it?

- Decomposed organic matter used as fertilizer
- Super-rich soil supplement
How does it work?

- Enhanced version of natural process
- Carbon + Nitrogen (ratio)
- Microbes- living bacteria
  - Psychrophilic: 55-70
  - Mesophilic: 70-100
  - Thermophilic 100-160
What goes into it?

- 100% of the Dining Hall food waste
- Including meat and dairy products!
- Food waste from PalaDen
- Coffee grounds from Barnes & Noble and Admissions
What DOESN’T go into it?
DO'S AND DONT'S OF THE DISH RETURN

USE UTENSIL BIN
Drop your forks, spoons, and knives into the black bins below the trays!

DON'T SHOVE NAPKINS INTO CUPS
It takes extra time to take the napkins out of cups, which slows down the cleaning process.

DON'T STACK PLATES
Try not to stack up plates with food on them. The dirtier the plates, the harder to clean.

DON'T STACK MORE THAN 2 CUPS TOGETHER
They'll most likely fall over and create a mess.

IF IT'S NOT SERVED IN THE DH, DON'T PUT IT ON THE TURNSTILE
Doing this makes it hard to sort in the back!
How Furman composes:

- Static piles
- In-row composting
- In-vessel composting
- Bokashi
- Compost tea
- Community compost
Last year, Furman composted 32.6 TONS of food waste

- That’s equal to:
  - 5 ½ elephants
  - 2 ½ school buses
  - 3 ⅔ tyrannosaurus rex
Goals?

- Eliminate waste in the food stream!
- Make our compost commercially marketable
- Mortality composting???
Again:

Food Recovery Hierarchy

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Landfill/Incineration
Last resort to disposal
Questions?

I JUST LIKE TO COMPOST

COMPOSTING'S MY FAVORITE
Recycling
On-Campus Recycling

2 drop-off locations (Behind Lakeside and McAlister)

Concrete comingle/paper bins

Blue bins on Swamp Rabbit and around Furman's track
Recycling Partners

Evergreen Recycling Inc.

Middleman company between Furman University and Pratt Industries

Responsible for North Village, Lakeside and South Housing blue bins

Chambers, Sophia, Jim, Laura, and I toured their facility last semester

Shelves stacked full of old computer monitors and hard drives

Machine that shredded hard drives
Recycling Partners

Republic Services

Residential waste management company in charge of picking up trash and cardboard recycling (giant blue dumpsters)
Recycling Partners

Pratt Industries Recycling

Receives recycling from Furman’s campus through Evergreen

Comingle aluminum/plastic, paper, cardboard
Contamination

Contamination is simply defined as when non-recyclable items are mixed in with recyclables items or when recyclable items are placed in the wrong recycling bins.

This problem is easily avoidable if members of the community are properly educated on what exactly is considered recycled material and what common misconceptions are to be avoided.

It is important to hold yourself to these standards as well as working to educate others on how not to contaminate!
What Can I Recycle?
What Can’t I Recycle?
2011/2014 Waste Tonnage

This graph shows the progress of the Furman waste management program between 2011 and 2014.

In 2011, there was about a 200 ton difference between trash totals and recycling totals.

But in 2014, the amount of recyclable material that was properly disposed of by Furman surpassed the garbage sent to landfills (by about 25 tons).

If later years (2015-2017) were to be included, we would see similar results of greater amounts diverted.
Recyclables In Garbage

This pie graph shows the percentage of recyclable materials that were found present in garbage outputs for 2015.

Plastics #3-7 and Glass are no longer recycled on Furman’s campus, but still take up almost 17% of the garbage that Furman disposes of.

Materials that are still recyclable on Furman’s campus (Mixed paper, Cardboard, Plastics #1-2, Aluminum and Steel) account for over 27%
Paper Towel Composting

- Piles of paper towel waste
- Recycling bin for paper towels
- Sign indicating paper towels are composted at Furman Farm
Goals?

Eliminate contamination

Increase education on WHAT, WHERE, and HOW to recycle

Increase participation/decrease laziness

Find areas where more recycling bins may be necessary

Continue to work together with the custodial staff and the rest of the waste management team on keeping this campus clean & beautiful

Spread SUSTAINABILITY
A Review and Overview...
The Twin Purpose of Zero-Waste

Macro-level:

- Minimize impact of Furman’s consumption at landfills through greenhouse gas production and land use transformation
- Reduce resource use and depletion

Micro-level

- Move campus life away from a culture of consumption to one of efficiency and care through individual actions and buy-in
Conflicting purposes?
A Plan for Success

- Pathway for future fellows to achieve this reality by working with campus stakeholders.
- Central plan and coordinating fellows will improve communication and execution by all.
- “Status bar” helps track progress.
- Four areas of focus: Residential, institutional, food, educational.
Uniform Recycling Bins

- There is not a uniform bin for recycling within the housing areas

Reusable Bags

- Somewhere between 500 billion and 1 trillion disposable bags are used each year around the world
Critical steps forward

Attacking micro-level waste, crafting a culture

- Zero-waste art shows
- Sustainable orientation
Critical steps forward

Attacking macro-level waste, our impact as an institution

- Research projects to create a proactive purchasing policy
- Creation of on-campus recycling facility and student corps to staff
THANK YOU SO MUCH!