Towards Zero Waste:
Implementations for Waste Reduction on Smith College's Campus

Sara Hoffman

May 8, 2008

EVS 300: Seminar in Environmental Science and Policy
Spring 2008

Professors Paulette Peckol and Gregory White

"Let every individual and institution now think and act as a responsible trustee of the Earth, seeking choices in ecology, economics and ethics that will provide a sustainable future, eliminate pollution, poverty and violence, awaken the wonder of life and foster peaceful progress in the human adventure."

John McConnell,
Founder of International Earth Day

ABSTRACT

Humans and Smithies specifically, are incredibly wasteful. Throwing things in the garbage is an afterthought in the daily life of a college student. In attempting to make Smith College more sustainable I had the idea to become a Zero Waste campus as waste is a sign of inefficiency and a lack of sustainable practices. As I researched, interviewed people, and conducted unofficial surveys of students I came to find that not only was Zero Waste impossible at Smith, but that as a group we need to learn to crawl before we can walk. That is to say, in my opinion people need to take more care in reducing, reusing, and recycling before there can be any hope of implementing a completely sustainable anti-waste system. What I've attempted in this project is to understand why we don't, as an institution of higher learning, recycle more than we actually do and to suggest some baby steps to change our habits in the attempt of eventually becoming waste free.

This is not a scientific report. It was not my intention to write a science-based report. It was my aim to understand the theoretical, ideological, and behavioral aspects as to why Smithies don't recycle as much as they should. I've used my knowledge of policy analysis and my understanding of trends on Smith's campus to evaluate the college's current issues with unnecessary waste and our below average recycling program. I began this project thinking about the strange dichotomy between my obsession with recycling everything possible and my ability to use multiple paper cups for my coffee addiction each week. The research process has been quite a journey. I would like to share my academic travels around campus, through our waste and towards a sustainable future with you. Enjoy.

INTRODUCTION

We began this course questioning the definition of sustainability. Throughout my environmental studies at Smith and in my life outside of Smith, I have always questioned sustainability. How long have we had this word in our vocabulary? What has occurred to lead us towards such a focus on sustainability recently? It seems like everywhere I go and everything I do lately somehow relates to or brings me back to sustainability. Sustainability has been talked about on radios, in newspapers, on the television- so much so that it's become a household word. Somehow, through all of the hype about how it's hip to be "green" the idea has gotten lost in translation. Anyone you ask will give you a slightly different answer. As I've traveled through my years at Smith even my definition has shifted. Sometimes, I find it hard to know which way is up in my environmental focus; what's beneficial for the economy is almost never beneficial for the environment and vice versa. Truly, economics and environmentalism are arch enemies in the never ending battle of development. We were presented with two definitions of sustainability:

> "[D]evelopment that meets the needs of the present without compromising the ability of future generations to meet their own needs."[1]
>
> "A sustainable society is one that ensures the health and vitality of human life and culture and of nature's capital for present and future generations."[2]

It's extremely difficult, if not impossible, to choose which definition is correct. The definition of sustainability is slightly different for everyone. For my purpose in this report, my

---

[1] G. Bruntland (ed.), *Our Common Future: The World Commission on Environment and Development*, Oxford: Oxford University Press, 1987, pg. 8.
[2] M.J. Groom, G.K. Meffe, C.R. Carroll, and contributors, *Principles of Conservation Biology*, 3rd ed., Sunderland, MA: Sinauer Associates, Inc., 1987, pg. 591.

idea of sustainability is much more earth-focused and resides somewhere closer to the latter definition above. I was asked through this assignment to propose tangible ideas to aid in improving campus sustainability. When I received this project, I found myself taking a deeper look at Smith, its culture, and my daily life. Where were the holes in the system? What needs to be fixed? Smith, on the surface, seems to be doing pretty well for itself, environmentally. As I thought more and more about the project, I began to notice how much coffee I was drinking. No, it's not what you're thinking- It's not because I know caffeine is bad for me and I should choose healthier alternatives, but because I had lost my reusable to-go mug and I kept purchasing several paper cups worth of coffee each week. My environmentalist heart always skips a beat when I toss my paper coffee cup in the trash. As I realized how many paper cups I was tossing in the trash I also noticed just how much trash and waste in general I was generating. Then, every Sunday, I began to notice that the trash room in my dormitory would be overflowing because the janitor did not collect the trash over the weekend. I realized that I wasn't the only one. All of my housemates were generating just as much, if not more, waste than I was. Waste is a sign of inefficiency in a system and so to find such an integral part of our life as humans to be so intensely inefficient on campus, I decided to focus my research on waste reduction strategies to aid in Smith's attempt at a sustainable future.

THE CASE FOR ZERO WASTE

What is Zero Waste?

When considering sustainability and waste reduction the logical goal seems to be striving towards Zero Waste. Waste causes great loss of value and resources. Humans are the only species that create excess waste. Advocates for a Zero Waste system believe that "we can

identify all types of waste and through their elimination, save money and achieve a more sustainable world."[3] The goal of Zero Waste expresses a need for a closed-loop system. Truly, waste is a sign of inefficiency in a system.[4] Zero Waste suggests that the entire concept of waste should be eliminated. Instead, waste should be thought of as a "residual product" or a "potential resource" to counter our basic acceptance of waste as a normal course of events. A variety of opportunities occur when waste is treated as a potential resource. Specifically, reduced costs, increased profits, and reduced environmental impacts occur when these residual products or resources are returned to natural and/or industrial systems.[5] Other exciting factors of Zero Waste are that it considers the entire life-cycle of our products, processes, and systems and it is broadly applicable. Sounds like an effortless, win-win situation, right? Several college campuses have implemented a Zero Waste system so I became convinced this was what Smith needed.

Why Zero Waste Won't Work at Smith

The more I researched, the more I realized that there were several reasons why Zero Waste wouldn't work for Smith College. First of all, it's incredibly hard to implement when a waste system is already in place. It is much better suited to be implemented in a new system, rather than converting an existing system. Also, in order to be more efficient with our solid waste management, and emissions, serious infrastructure would need to be altered and/or replaced. Finally, it seems that Zero Waste is just too much for the population of Smith to swallow. It's a complicated process that requires changing our entire definition and ideas about waste. Also, in speaking to Smith's professional recycling manager, Roger Guzowski, he explained to me that even the title "Zero Waste" is a false claim. "There will always be some

[3] Zero Waste Alliance, The Case for Zero Waste, 26 Feb. 2008, <http://www.zerowaste.org/case.htm>.
[4] Ibid.
[5] Ibid.

sort of waste. That's just how our system operates."[6] Clearly, discussing zero waste as a means of campus sustainability was not worth focusing on. Although, it seems like a goal to one day strive for as a campus, I wanted to focus on something that could have more impact on the campus in the short term. This led me to focus on waste minimization on campus through a more effective recycling program and small, daily activities related to waste generation that can easily be changed. It is the things that go unnoticed such as not realizing how much waste you produce or where it goes when you throw it in the garbage can that allow us to waste as much as we do. If we realize what we're doing when we're using a paper cup, instead of a to-go mug or throwing paper or aluminum cans in the trash bin instead of the recycling bin, we can reduce our impact on the Earth and make our lives a little bit more sustainable.

METHODOLOGY

As I mentioned in my abstract it was not my intention to write a scientific report about reducing waste at Smith. Focusing in government and environmental policy throughout my college career I decided to write about what I know: human inclination towards environmentalism, policies encouraging human behavior to change, and the structure of such a policy. As I focus on Smith's recycling program I want to show the flaws in our current program as well as easily implementable solutions to those problems. I hope to recommend reasonable and effective ways to reduce waste on our campus and change Smith's outlook on behavior towards waste. For my research, I was in contact with Roger Guzowski, the Five College Recycling Manager via e-mail and interviews. I also conducted some unofficial surveying of Smith students for my own knowledge and affirmation of my generalizations of Smithies' wasteful tendencies. Otherwise, most of my knowledge has come from living and experiencing

[6] Roger Guzowski, Five College Recycling Manager, *Personal Interview*, 18 Apr. 2008.

Smith as a student for the last four years and paying careful attention to the general trends in my fellow students' reducing, reusing, and recycling habits. If anything, my methodology is my explanation of any generalizations or assumptions I may seem to make throughout my report.

WHY RECYCLE?

We live in a wasteful society. It has become instinctual to throw things out without a second thought. We also don't think about the full life of a product and the fact that for every ton of post-consumer waste, 20 tons of pre-consumer waste is produced through the manufacturing process. This process includes the extraction of natural resources from the Earth, the energy to convert natural resources into something useable, the emissions released through industrial processes, and the packaging of the final product for shipment and delivery. The average American produces 4.5 pounds of waste a day, more per capita than any other country.[7] The majority of this waste is sent to landfills and incinerators, risking unnecessary environmental damage and the loss of precious material resources that can be reused. Recycling diverts valuable resources from our waste stream and lessens the environmental impact of our waste production.[8]

There are several reasons why we should recycle. Not only does recycling reduce the amount of waste that ends up in landfills and incinerators, it also conserves natural resources and saves energy. Recycling reduces the consumption of scarce materials and materials that require a large amount of energy to be extracted from the Earth.[9] The manufacturing process of new products from raw materials versus recycled products is much more costly in terms of energy

[7] "Recycling," *Municipal Solid Waste: Basic Information*, 3 Jan 2008, United States Environmental Protection Agency, 2 May 2008, <http://www.epa.gov/epaoswer/non-hw/muncpl/facts.htm>.
[8] Ibid.
[9] Ibid.

and resource use. According to the Environmental Protection Agency, the United States diverted 82 million tons of waste away from landfills which accounts for only 32.5% of our total municipal solid waste.[10] That number is a vast achievement in comparison to 1980 when we only recycled 15 million tons accounting for only 10% of our trash.[11] If we can come this far in 26 years, I have to believe that we need to keep progressing in this direction and continue to increase the percent of our solid waste that we recycle. Just to put some of the environmental benefits into perspective, the 82 million tons we managed to recycle in 2006 "prevented the release of approximately 49.7 million metric tons of carbon into the air- roughly the amount emitted annually by 39 million cars, or 1,300 trillion BTUs, saving energy equivalent to 10 billion gallons of gasoline."[12]

With the incredibly positive effects recycling has on reducing our footprint, it makes me wonder why more people don't recycle. Truly, I believe people generally don't realize the positive effects of reducing, reusing, and recycling. All of this makes me think that the government should step up to the plate and encourage more recycling. I have to believe that more than 32.5% of the waste we generate is recyclable. Why aren't we recycling all of the waste we are able to recycle? Why are paper, plastics, and aluminum cans ending up in landfills? In 1976, Congress passed the Resource Conservation and Recovery Act (RCRA). The act's primary goal is to protect human health and the environment from the potential hazards of waste disposal. In addition, RCRA calls for conservation of energy and natural resources, reduction in waste generated, and environmentally sound waste management practices.[13] I believe that RCRA could be much more effective if it was a little more regulatory on the

[10] Ibid.
[11] Ibid.
[12] Ibid.
[13] Ibid.

American people and implemented automatic, government-sponsored, curbside recycling and composting programs in every major city in the United States. If RCRA were a little more effective we could double our 82 million tons of recycled solid waste in no time.

SMITH'S CURRENT RECYCLING PROGRAM

Smith's current trends in recycling are fairly accurate representation of the general trends of the United States. On campus we have about 5% of people that recycle absolutely everything they are able to, about 5% that are at the other end of the spectrum and wouldn't recycle if they were paid to. The majority of students, faculty, and staff on Smith's have recycling habits that tend to fluctuate throughout the school year.[14] It's questionable as to why Smithies aren't steady in their recycling practices. Roger Guzowski, the Five Colleges Recycling Manager, explained that he believes Smith students and faculty get pulled in so many different directions and consumed in their work that minor things like wasting less and being sure to recycle rank pretty low on our list of priorities. I've found that in our busy lives, we don't take the time to think about where the products we use came from and where they will end up after we are done with them. None of the students that I spoke to knew exactly where our trash went after we threw it out. Architect and designer William McDonough gave a TED talk in which he discussed the phenomenon of throwing things "away." He asked the audience, "can everyone point to away?"[15] I agree with McDonough in the sense that there is no "away" when it comes to waste. Our waste continues to exist with us on this planet. Whether it goes to the town landfill, or to a neighboring state to be incinerated, it doesn't go "away."

---

[14] Guzowski, Interview.

[15] William McDonough, "The Wisdom of Designing Cradle to Cradle," TED, Monterey, CA, 26 Feb. 2005, < http://www.ted.com/index.php/talks/view/id/104>.

Smithies don't feel the impacts of their waste because Chapin Lawn is not our landfill. Instead, we pay the city of Northampton $75 per ton of trash to dump in the Northampton landfill. Smith College accounts for 2% of the entire landfill.[16] 2% might not seem like that much to you, but in fact 2% of the "48,482 tons accounted for in 2006" equals roughly 970 tons.[17] Smith College has contributed 970 tons of solid waste to the Northampton landfill in 2006. As a result of paying per ton, Smith focuses their recycling program simply on keeping items out of the landfill as both a general environmental benefit, as well as an economic benefit for the college. A ton of recyclable material is $75 saved by Smith College.

So how good are we at saving the school money? According to Mr. Guzowski, Smith recycles less than 25% of our basic trash.[18] The national average is 32.5%. Personally, I find this unacceptable. The national average accounts for every over-user and waster in the country and it's still a higher percentage than that of the Smith population? I came to Smith thinking that every student was an activist. Every student is socially and politically minded and we were the type of women that would protest, kick Coke-a-Cola off campus, and participate in events like Focus the Nation. To find out from Mr. Guzowski that our recycling levels were below the national average was incredibly disheartening. Were we the only college in the area that wasn't minimizing waste? What can we do to improve our percentage?

FIVE COLLEGE COMPARISON

After finding out our recycling percentage and excess waste, I was determined to prove that Smith waste wasn't as bad as I thought in comparison to our neighboring schools.

---

[16] Ned Huntley, P.E. and James R. Laurila, P.E., *Department of Public Works Solid Waste Management Division: Northampton Integrated Solid Waste Management Facilities*, 3 Apr. 2007, Power Point Presentation, <http://74.94.173.233/DPW/Landfill/CC%20Landfill%20Presentation.pdf>.
[17] Ibid.
[18] Guzowski, interview.

Automatically, I wanted to look to compare ourselves with Mount Holyoke as they are an all-women's college and a fairly similar size. I assumed that the culture of their campus would be fairly similar to our campus. I found out, however, that they are much better about reducing their waste and recycling what they can. Mount Holyoke prides themselves on their green initiatives and has incredibly active student environmental leaders. Maybe that's what we are missing- student involvement. I then knew that comparing ourselves to UMass- Amherst is impossible simply based on population size and Hampshire College was also unproductive because they have had a proactive outlook on environmental issues since the college was founded. I was left with Amherst College, and although its population is somewhat smaller than ours, their general outlook on things and focus on schoolwork is extremely similar to Smith's. What I found was intriguing. Amherst College recycles a percentage of 31% of their basic trash.[19] However, Amherst students generate more trash than Smithies do. Amherst has about 150 pounds per student, while Smith has less than 100 pounds per student. Although we are less wasteful, in general, we still need to increase our recycling percentage. I also looked to Amherst College for solutions. Why were they able to recycle so much more than us? Roger Guzowski explained to me that Amherst has had major building renovations done in the last 8-10 years and in doing so created trash and recycling closets conveniently on every floor of the dorms. Smith, on the other hand, has dissimilar buildings so it's very difficult to create a broadly applicable recycling plan.

I also looked to other liberal arts colleges. Our recycling habits are already compared to the habits of other liberal arts colleges throughout the country through a program called "Recyclemania." Essentially Recyclemania is an attempt to stir up some friendly competition among small colleges to see who can recycle the most in a given time period (usually a month or two each spring semester). Middlebury College has won Recyclemania in past years and

[19] Ibid.

generally out-do other colleges in their waste minimization and incredibly efficient recycling program. Wellesley College, on the other hand, is less sustainable than we are currently and have yet to hire a Recycling manager or write a recycling program into the college budget. So from one extreme to the other, Smith is not necessarily the worst, but definitely not at all the best either. By comparing ourselves to other schools I was able to understand exactly where the problems were in our current system and hypothesize some possible small-scale solutions to help us reduce our waste.

PROBLEMS WITH SMITH'S CURRENT RECYCLING PROGRAM

As I have found through comparing Smith College's recycling statistics to other colleges and observing campus behavior, I believe there are several areas in which small things can be improved upon to help us move forward towards a more sustainable, less wasteful campus. In each of these areas, I hope to present a current problem as well as easily implementable solutions that do not require major infrastructural, labor, or monetary investments.

Understanding our Waste

Simply put, we don't understand or comprehend our waste. In order for our behavior pattern to change it is necessary to raise awareness and make people understand that the current waste flow at Smith College is unacceptable. Every time Smith tries to make people aware of wasting, a recycling event, or advertise alternative solutions they simply plaster the campus with posters- only creating more waste for a notification about how to reduce waste. Seems hypocritical doesn't it? Every dormitory on campus is supposed to have elected Earth Representatives and while these girls volunteer for the position, what that position entails and what they are required to do for a house gets lost in translation. Some earth reps are extremely active in their house, collecting redeemable bottles and cans and filtering that rebated money for

house social events, while others simply put up posters informing their housemates of where the recycling bins are located. In order to raise awareness and make Smithies care more about reducing, reusing, and recycling I believe each house's Earth Representative needs to have a more impacting role in her house. The Earth Reps could even receive a small stipend from the college to aid in environmental education activities and help their house care about reducing waste.

At Clarkson University, a group of students carried around a plastic bag of all their non-recyclable trash for a week. The exercise was meant to pique fellow students' curiosity and to spur discussion about waste and recycling.[20] Passionate students at Smith could do something similar such as an art instillation around campus using trash generated by students to make a statement about how much Smithies waste. Another example comes from the College of the Atlantic. The college community is incredibly environmentally inclined and in order to take their environmentalism to the next level the community decided to "make graduation a full-scale celebration of the college's recycling ethic."[21] They made the entire week of graduation waste-free by collecting recyclables and returnables and even using completely biodegradable dishes and cutlery. If anything it not only made the students aware about reducing levels of waste but also encouraged families and friends of graduates to participate as well. This idea could also be implemented at Smith College, possibly by declaring an Earth Week, where not only are students and faculty to be waste free, but professors are encouraged to discuss connecting the environment to their course curriculum and organizations sponsor various events to aid in the discourse and environmental action throughout the week.

---

[20] Anna, Weggel, "A Trashy Idea," *Chronicle of Higher Education*, 11 Jan. 2008, Vol. 54, Issue 18, 1.
[21] Donna Gold, "Trash-Free Grad," College of the Atlantic.

Controlling Purchasing

Purchasing is an interesting problem at Smith College. At a larger scale, Smith used to have an Office of Purchasing which was responsible for ordering anything each department, faculty, and/or staff member needed to do their job.[22] The Office of Purchasing would then make a purchase based on the durability, recycled materials used in the production of the product, and ability of the product itself to be recycled. Instead, Smith departments have decentralized purchasing and rather than going to the Office of Purchasing any faculty or staff member can open up the W.B. Mason or Staples catalogue and purchase a new desk, filing system, or ream of non-recycled paper.[23] Instead of choosing products based on their environmental impacts, faculty and staff members now choose them based on aesthetics or price.

At the same time, Smith can't control what students purchase. Every year a new class of Smith students arrives on campus with their over-protective parents who find it necessary to go to Target or Walmart and outfit their daughter's room with every amenity imaginable. All Smith can do is encourage students to buy things that are more environmentally friendly through information sessions or sales in the campus center and bookstore at the beginning of the semester. Then, at the end of the Smithie's four years, she realizes she has no need for all of her excess dorm room furniture and mini-fridge and it becomes Smith's task to properly dispose of and donate the excess "stuff" Smith students tend to accumulate.

For both the decentralizing of purchasing at the departmental level and the inability to control purchasing at the student level, Smith needs to implement some ground rules. Rather than reopening the Office of Purchasing, faculty and staff members need to commit to purchasing recyclable materials whenever possible. Truly, there needs to be a set of guidelines

[22] Guzowski, Interview.
[23] Ibid.

outlining what can be purchased from which company and why. As for controlling what Smith students purchase, there needs to be some responsibility placed on the individual. Students are extremely lucky at Smith that they have the ability to keep their belongings over summer breaks in the basements and attics of their dorms. This is an incredibly unusual college policy. Smithies take this policy and run with it, not realizing how much they are accumulating or storing. When you have to move all of your belongings out of your house every year you begin to minimize your accumulation of stuff and keep only what's essential. Smithies, however, don't realize this throughout their time at Smith. As seniors move out, Smith also needs to implement some rules about what the college is willing to dispose for you and what students need to handle on their own. Creating a more effective outline of purchasing responsibilities can drastically improve our issues with waste.

Parallel Access/Convenience

For the majority of my life at Smith trash cans have lined the halls of Smith dorms without a recycling bin in sight. Trash cans have always been just outside your door, while the recycling center is either on the main floor or in the basement. Why would anyone want to recycle when they have to go all the way downstairs, when the trash can is just ten feet away from your room? Because of this unequal access I witnessed cans, bottles, plastics, and paper being dumped in trash cans every week. Very few, if any, students had the time in their schedule to venture all the way downstairs with their recyclables in hand. Just this year in my dorm, they placed all the trash cans on the first floor right next to the blue recycling bins. Now, since you have to haul all of your waste downstairs and there is parallel access to both the blue containers and the trash containers more students are likely to recycle. Often I witness Smithies around campus that see a trash can close to them while a recycling bin is only on the other side of the room and still

throw their can or plastic bottle in the trash because they don't want to walk further than they need to in order to throw out their waste.

Parallel access has also become an issue in individual dorm rooms. Smithies often complain about the "unsightliness of the green trash bins provided to them in their dorm rooms and ask them to be removed or remove the bins themselves."[24] As a result, they just use the blue recycling bin as the depositor of all their waste and don't individually sort recyclables. Mr. Guzowski sees this parallel access issue as a prime reason Smithies aren't recycling and has applied for funding to install new trash bins in every room alongside the existing recycling bins. Unfortunately, the only way he's had any luck in getting approval is tagging his trash bin needs onto the budget for major dormitory renovations. He was unable to get the money he needed without riding the coat tails of the larger budget expenses.[25]

Parallel access and convenience are the two largest problems with Smith's current recycling program. Every Smithie I've spoken to has said she would be more likely to recycle if it were more convenient and easier to access. If we ensure that with every trash can there is a recycling bin next to it and make recycling as convenient as possible I have to believe that we will be able to successfully reduce our waste and increase recycling on campus.

CONCLUSION

As it stands, our recycling and waste reduction programs on campus are incredibly reactive. Smith College reacts to the general trends on campus rather than trying to set better trends. In order to make any change for the better and take Smith's environmental programs into the future, they need to be a priority for the college. Currently, waste on campus is an

[24] Guzowski, Interview.
[25] Ibid.

afterthought. Reducing, reusing and recycling needs to become a campus wide initiative. I believe that Smith functions as a small-scale political system and the only way to change Smithies' behaviors are to implement better policies and stress its importance campus-wide. Truly, we need to implement a policy like RCRA to make people wake up and pay attention. Smith is heading the right direction, environmentally. We have set up the Green Team, a Sustainability Committee, participated in Focus the Nation, and are currently developing an Environmental Science and Policy major. Clearly, the environment is important to Smith College. Shouldn't we take it to the next step and work to reduce our impact on the environment? As I quoted in the epigraph, John McCarroll charges that every institution needs to become a trustee of the Earth. Smith needs to take this role. Our verbal commitment to a recycling program is not good enough. I believe that including recycling and waste minimization in our college budget will be the spark that leads to change. No matter what definition of sustainability each of us might have, no one can deny that reducing waste is a sustainable practice. As Smith College continues to grow and change with the times now is the time to reduce our impact and encourage better recycling practices. As we evolve as an institution, it is my hope that we can progress towards zero waste and implement waste reductions for a sustainable future.