

**The Factors that influence the Creation and Maintenance
of an Effective Recycling Program**



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Part I: Analysis of Recycling Programs at American Colleges and Universities.

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Introduction

The objective of my research is to determine what factors are correlated with effective, sustainable recycling programs, and what factors hinder the creation of such programs. Are small-town schools ‘greener’? Are wealthier schools more likely to fund a recycling program? Did the founding of an Environmental Studies program influence the creation of recycling programs, or vice versa? My research shows that although many factors have some influence over the creation of a successful recycling program, the most influential factor is the commitment made by the college administration to protect the environment through recycling. Unless the college itself feels that such a program is vital to its function, the program will not exist, regardless of other factors. Sustainability does not simply occur; it must be made to happen.

This research was initiated to compare the recycling programs at a variety of schools to my own institution, Wellesley College. Wellesley is a mid-sized liberal arts college in Wellesley, Massachusetts, a suburb of Boston, and is ranked fourth among schools of its kind by US News and World Reports. While Wellesley has many strong programs that address social problems both in the classroom and across the institution, there are no committees, administrative departments, or individual staff, outside of those faculty within the Environmental Studies major, that directly address the college’s environmental impact or environmental education. In addition, its Environmental Studies program was founded only recently, in 2001. My aim here is to ascertain the factors that allow such a worldly center of education, one that has so much in terms of gender, cultural, and racial studies, to have so little when it comes to another major societal issue: the environment.

The first part of this paper documents and analyzes the quality of each recycling program at 43 schools in the United States in conjunction with many other factors. Quality, however, can be somewhat subjective. In order to measure the quality of each program as objectively as possible, I pared down the reality of the 43 programs I studied into data points that could be compared and quantified: the presence of a recycling program, the age of the program, number of types of materials recycled, the presence of a

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recycling coordinator, and the thoroughness of its recycling webpage. While the data I synthesized is useful, I should note that it does not always provide a true window to the effectiveness and quality of the program, due to partially incomplete information and the impossibility of translating quality accurately into numerical data. This data does contain patterns that expose the factors that play a role in the development of environmental consciousness; however, it is essential that this data be juxtaposed with detailed, qualitative examinations of the programs of individual schools. The second section of this paper examines three schools with successful programs, Middlebury College, Bowdoin College, and Smith College, and compares them to Wellesley. The final section is a list of recommendations for the improvement of Wellesley's recycling program, based on what has been successful (and avoids what has not been successful) at similar institutions.

1.1.0 Methods

Included in this study are 16 colleges and universities in the greater Boston area, 9 women's colleges, and the top 25 liberal arts colleges, as defined by US News & World Reports, totaling 43 schools in all. Some colleges fit into more than one category, and Wellesley College, the school that I am examining in the most detail, fits into all three. The local colleges were chosen essentially at random, though all are well-known, prestigious institutions in the area. Most of the women's colleges included in the study were also local, even if they were not as highly ranked. All five of the remaining women's colleges in the seven-sister consortium were included, in addition to Spelman College in Georgia and Scripps College in California. In order to rank the quality of each school's recycling program, I developed a 100-point system that broke down the various aspects of each recycling program into five categories. After the schools were ranked, I grouped them into four tiers, with Tier 1 consisting of those with the highest quality scores. Due to the numerical divisions among the Tiers, Tier 4, the lowest tier, is made up exclusively of those schools that have no easily located recycling program.

1.1.1 Presence of an Institutional Recycling Program

The first category had a simple yes or no answer: does a college-funded, institutionalized recycling program exist at the school in question? Schools that answered 'yes' received 20 points, and those that answered 'no' received 0 points. In the 43 schools I researched, there were no definitive 'no's, but there were six schools that had no easily determinable answer to the question. Schools such as these were ranked as though they had no recycling program, but if any of these institutions did in fact run such a program, it seems that a safe assumption would be that their poorly advertised and poorly staffed program would be on the lower end of the quality scale.

1.1.2 Number of Types of Materials Recycled

The second category measured quality by the number of materials recycled, for a greater diversity of recycled materials indicates a greater reduction in the institution's environmental impact. If the school had the facilities to recycle all 16 materials I chose to evaluate, the school received 30 points, with points decreasing as the number of materials recycled decreased. I documented the presence of recycling facilities for the following materials: 1) mixed office paper, 2) newspaper, 3) glossy paper, 4) corrugated cardboard, 5) boxboard, 6) bottles and cans (aluminum and/or plastic), 7) glass, 8) metal (tin, steel, aluminum, and other types of scrap metal), 9) batteries (alkaline and/or lithium ion), 10) electronics (computers, monitors, diskettes, CDs, etc.), 11) printer cartridges, 12) fluorescent tubes, 13) waxed cartons, 14) Styrofoam, 15) compost, and 16) yard waste. Each type of material recycled was worth the same number of points, though one could make the argument that some materials, like paper and aluminum, are more vital to a recycling program than some of the less common materials. Some data in this category was not available, but points were based on the most complete information I could locate.

1.1.3 Age of Recycling Program

The third category accounts for the age of the recycling program. More developed, organized, and inclusive recycling programs often come with age. Older programs can also be indicative of a greater commitment to recycling and the environment, though this is by no means always the case. I gave programs that were 20 years or older 20 points, 19-year-old programs 19 points, and so on. Schools that could only provide a decade approximation are marked as if the program began in the middle of that decade. For example, a school whose recycling program started in the 1980s is marked as if the program started in 1985, or 18 years ago, which results in 18 points. For schools that had a recycling program but no approximate date, 10 points (10 years), which is roughly the average known age of the studied recycling programs, was awarded.

1.1.4 Presence of Recycling Staff

The fourth category incorporates the presence of a hired recycling or general environmental coordinator into the data. A school that has created a permanent position to address environmental issues has made a clear commitment to those issues. If the school has hired one or more full-time recycling/environmental coordinators, it received 15 points. A school that has created a part-time position devoted to recycling receives 10 points, and a position that includes recycling as one of its many duties is awarded 5 points. If the program is solely student-run, with little or no college funding, the school receives 2 points. Schools with no located recycling program or no discernable recycling staff receive 0 points.

1.1.5 Quality of Recycling Webpage

Though judging the quality of each school's recycling webpage is in some ways subjective, I ranked the pages as carefully and as objectively as possible. The presence of an informative webpage often represents the weight the program holds on campus. A poorly designed or poorly maintained website indicates that less time is spent maintaining the program and keeping the campus informed. In addition, the location of the webpage is important as well. Links in central, high-traffic areas are indicative of the level of primacy of the program. I judged based on the thoroughness of the information provided, whether it answered all of my questions, the currency of the information, the ease of location, the presence of a contact person, and whether or not the program had its own page or was simply mentioned on another department's page. Thorough, current, easy-to-find, individual webpages received 15 points, less than thorough or less than current webpages were judged on a sliding scale of 6 and 14 points, based on the level of incompleteness and inaccuracy, and programs that were mentioned on another page were given 5 points. If there was no recycling webpage found, the school received 0 points.

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1.1.6 Division into Tiers

Each recycling program's score in the five categories previously outlined made up the school's total score. After I tabulated each school's total, I divided the 43 schools into 4 tiers, with Tier 1 being of the highest scores and Tier 4 being of the lowest scores. Tier 1 was made up of schools with a total of 80-100 points (out of 100 possible points); Tier 2, 60-79 points; Tier 3, 20-59 points; and Tier 4, 0-19 points. Tier 4 schools had no discernable recycling program, but never confirmed their lack of such a program, and so were marked as if they had no recycling at all. Creating tiers such as these serves to ease the analysis of the data and clarify the patterns that emerge. In addition to displaying how each school scored in each of the five categories, Table 1 lists the schools by recycling quality ranking, which shows that within each tier there is a range of quality.

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Table 1. Quality rating of schools sorted

Tier	Schools	recycling program?	# recycled materials	age of program	recycling coordinator?	quality of website	Total score
	Total Possible	20	30	20	15	15	100
1	Middlebury College	20	30	14	15	15	94
1	Northeastern University	20	30	14	15	15	94
1	Smith College	20	30	12	15	15	92
1	Mount Holyoke College	20	30	11	15	15	91
1	Bates College	20	30	10	15	15	90
1	Harvard University	20	30	10	15	15	90
1	Tufts University	20	25	13	15	15	88
1	Bowdoin College	20	25	13	15	12	85
1	MIT	20	25	14	10	15	84
1	Amherst College	20	20	14	15	12	81
2	Boston University	20	15	14	15	15	79
2	Claremont McKenna College	20	20	18	5	12	75
2	UMASS Boston	20	20	10	15	10	75
2	Brandeis University	20	20	4	15	15	74
2	Carleton College	20	20	18	15	0	73
2	Wheaton College	20	20	8	10	15	73
2	Oberlin College	20	25	10	2	15	72
2	Grinnell College	20	15	20	15	0	70
2	Wesleyan University	20	20	8	5	15	68
2	Colby College	20	15	14	7	10	66
2	Williams College	20	20	10	5	11	66
2	College of the Holy Cross	20	25	9	5	5	64
2	Washington and Lee	20	15	3	15	10	63
2	Wellesley College	20	15	12	5	10	62
2	Pomona College	20	20	10	2	10	62
2	Boston College	20	20	10	0	12	62
2	Haverford College	20	20	10	5	5	60
3	Bryn Mawr College	20	15	10	5	9	59
3	Davidson College	20	10	18	10	0	58
3	Vassar College	20	15	13	7	3	58
3	Simmons College	20	10	10	0	15	55
3	Hamilton College	20	15	13	5	0	53
3	Babson College	20	15	10	2	5	52
3	Swarthmore College	20	20	10	0	0	50
3	Worcester Polytechnic Institute	20	10	9	5	5	49
3	Emerson College	20	15	2	5	0	42
3	Trinity College	20	0	10	2	0	32
4	Harvey Mudd University	nk	10	nk	2	0	12
4	Barnard College	nk	0	nk	2	0	2
4	Colgate University	nk	0	nk	0	0	0
4	Regis College	nk	0	nk	0	0	0
4	Scripps College	nk	0	nk	0	0	0
4	Spelman College	nk	0	nk	0	0	0

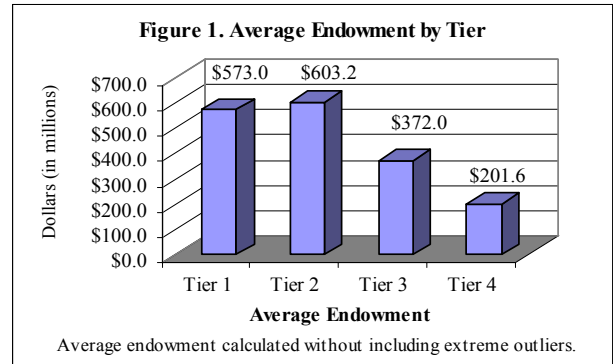
1.2.0 Findings

There are many factors that could affect a school's ability or desire to start and maintain a recycling program. First, there are logistical limitations like the financial resources available to the school and the size of the student body. Second, there are factors that affect the school that cannot be easily changed, like its location, whether urban, suburban, or small town, or their status as a women's college. Third, there are factors that are essentially a matter of effort, choice, and organization, like the presence of an environmental studies program. All of these factors affect the social environment of the school to make it more or less conducive to a recycling program, and can help to explain why some schools have better developed programs than others. These explanations are not excuses, however; they are simply patterns. For each of these patterns, there are exceptions that show that there is no factor that single-handedly prevents a school from running an effective recycling program.

1.2.1 Endowment

There is indeed a relationship between the size of a school's endowment and the quality of its recycling program. I found that the schools with the best recycling programs have a higher average endowment than those with lower quality programs. The endowments of some schools in the study are not included in the average for they have endowments that are so large that they would distort the average inaccurately. To be counted as an outlier, the school must have an endowment that is \$2 billion greater than the next lowest endowment. Harvard University and the Massachusetts Institute of Technology (MIT), both major research universities that ranked in Tier 1, were the only schools that fit into this category, with endowments of \$18 billion and \$6 billion respectively (Petersons.com, 2003). Table 2 is a complete list of schools by endowment, including Harvard and MIT.

Tier 1 and Tier 2 schools have similar average endowments (excluding the two outliers) of \$573 and \$603.2 million, respectively. The average endowment in Tier 3 is roughly one-third lower than both Tier 1 and Tier 2, with an average of \$372 million. Tier 4 has an average that is merely a third of those in Tier 1 and Tier 2, with an average of \$201.6 million. This suggests that environmental spending is an economically normal good that is better funded when financial resources increase. Poorer schools have fewer flexible funds and therefore cannot afford to spend money on 'non-



essentials' like a recycling program. Wellesley has the highest endowment of all liberal arts colleges in this study, tied with Pomona College, but both are lower-level Tier 2 schools (Petersons.com, 2003). I infer that high endowments do not guarantee a high-quality recycling program, but very low endowments can discourage a school from investing in sustainable programs, even if those programs prove cost effective in the long run. It should be noted, however, that the school with the lowest endowment in this study, UMASS Boston, has a high Tier 2-level recycling program, proving that it is not money alone that determines a school's level of sustainability.

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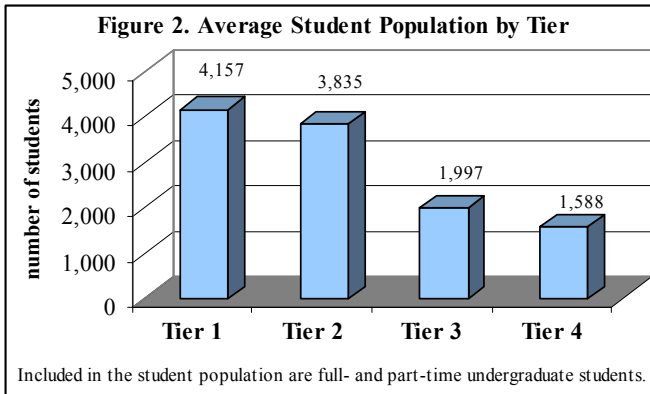
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Table 2. Schools sorted by endowment.

Tier	Score	School Name	Endowment
1	90	Harvard University	\$18,300.0
1	84	MIT	\$6,100.0
2	62	Wellesley College	\$1,100.0
2	62	Pomona College	\$1,100.0
2	62	Boston College	\$1,100.0
2	70	Grinnell College	\$1,000.0
2	66	Williams College	\$980.2
3	50	Swarthmore College	\$949.9
1	92	Smith College	\$917.0
1	81	Amherst College	\$890.5
2	79	Boston University	\$674.1
1	94	Middlebury College	\$666.8
2	63	Washington and Lee	\$639.0
2	72	Oberlin College	\$631.2
3	58	Vassar College	\$616.2
1	88	Tufts University	\$592.0
2	73	Carleton College	\$543.5
2	68	Wesleyan University	\$520.7
1	94	Northeastern University	\$511.3
3	53	Hamilton College	\$482.9
4	0	Colgate University	\$464.5
3	59	Bryn Mawr College	\$437.2
1	85	Bowdoin College	\$433.2
1	91	Mount Holyoke College	\$399.7
2	74	Brandeis University	\$397.0
2	64	College of the Holy Cross	\$377.6
2	75	Claremont McKenna College	\$367.2
2	66	Colby College	\$353.4
3	32	Trinity College	\$343.0
3	58	Davidson College	\$317.9
2	60	Haverford College	\$311.2
4	0	Spelman College	\$228.9
3	49	Worcester Polytechnic Institute	\$213.3
4	0	Scripps College	\$184.5
3	52	Babson College	\$181.2
1	90	Bates College	\$173.1
4	12	Harvey Mudd University	\$168.2
2	73	Wheaton College	\$150.6
3	55	Simmons College	\$149.0
4	2	Barnard College	\$138.4
3	42	Emerson College	\$29.0
4	0	Regis College	\$25.2
2	75	UMASS Boston	\$9.3

1.2.2 Size of Student Population

The size of the undergraduate student population was highly correlated with the success of the recycling program. The average was calculated without removing extreme outliers, and included all full- and part-time undergraduate students. Tier 1 had the highest average student population at 4,157; Tier 2 had the next largest average student



population at 3,385; Tier 3 had a lower average of 1,997; and Tier 4 had the lowest average at 1,588.

A larger student body could result in a more effective campus recycling program, for a greater number of people would increase the likelihood that motivated

environmentally-conscious individuals would be present. In addition, when the size of the student body is juxtaposed with the size of the school's endowment, it puts the effect of the quantity of resources at the school's disposal into perspective, as can be seen in Table 3.

In Table 3, I divided the data into three categories: \$0.25 million of endowment per student or lower, \$0.26 - \$0.50 million of endowment per student, and \$0.51 million of endowment per student or higher. The category with the lowest endowment per student had an average recycling quality score of 52.2 (out of 100), while the top two categories had 71.1 and 72.8, respectively. This further reinforces the impact that a large endowment has on the quality of a recycling program.

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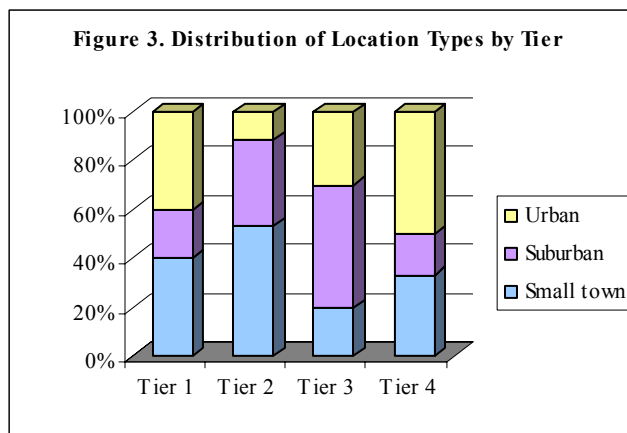
Table 3. Schools sorted by endowment per student (in millions)

Tier	Score	College	Student pop.	Endowment (in millions)	Endowment/ Student pop.
1	90	Harvard University	6,600	\$18,300.0	\$2.77
1	84	MIT	4,220	\$6,100.0	\$1.45
2	70	Grinnell College	1,340	\$1,000.0	\$0.75
2	62	Pomona College	1,600	\$1,100.0	\$0.69
3	50	Swarthmore College	1,470	\$949.9	\$0.65
1	81	Amherst College	1,630	\$890.5	\$0.55
2	66	Williams College	2,000	\$980.2	\$0.49
2	62	Wellesley College	2,300	\$1,100.0	\$0.48
2	63	Washington and Lee	1,760	\$639.0	\$0.36
2	75	Claremont McKenna College	1,050	\$367.2	\$0.35
1	92	Smith College	2,660	\$917.0	\$0.34
3	59	Bryn Mawr College	1,333	\$437.2	\$0.33
1	94	Middlebury College	2,300	\$666.8	\$0.29
2	73	Carleton College	1,950	\$543.5	\$0.28
2	60	Haverford College	1,140	\$311.2	\$0.27
3	53	Hamilton College	1,770	\$482.9	\$0.27
1	85	Bowdoin College	1,630	\$433.2	\$0.27
3	58	Vassar College	2,440	\$616.2	\$0.25
4	12	Harvey Mudd University	700	\$168.2	\$0.24
4	0	Scripps College	800	\$184.5	\$0.23
2	72	Oberlin College	2,840	\$631.2	\$0.22
1	91	Mount Holyoke College	2,000	\$399.7	\$0.20
2	66	Colby College	1,810	\$353.4	\$0.20
3	58	Davidson College	1,670	\$317.9	\$0.19
2	68	Wesleyan University	2,790	\$520.7	\$0.19
4	0	Colgate University	2,780	\$464.5	\$0.17
3	32	Trinity College	2,070	\$343.0	\$0.17
2	64	College of the Holy Cross	2,800	\$377.6	\$0.13
2	74	Brandeis University	3,100	\$397.0	\$0.13
1	88	Tufts University	4,750	\$592.0	\$0.12
2	62	Boston College	9,000	\$1,100.0	\$0.12
3	55	Simmons College	1,300	\$149.0	\$0.11
4	0	Spelman College	2,139	\$228.9	\$0.11
3	52	Babson College	1,700	\$181.2	\$0.11
1	90	Bates College	1,780	\$173.1	\$0.10
2	73	Wheaton College	1,550	\$150.6	\$0.10
3	49	Worcester Polytechnic Institute	2,820	\$213.3	\$0.08
4	2	Barnard College	2,260	\$138.4	\$0.06
2	79	Boston University	17,600	\$674.1	\$0.04
1	94	Northeastern University	14,000	\$511.3	\$0.04
4	0	Regis College	850	\$25.2	\$0.03
3	42	Emerson College	3,400	\$29.0	\$0.01
2	75	UMASS Boston	10,565	\$9.3	\$0.00

1.2.3 Location Types

I found some unexpected patterns when comparing the location types (urban, suburban or small town) of the various tiers. I expected schools from small towns to be greener, and urban schools to be least green, but that does not seem to be the case. Tier 1 schools had the same proportions of urban and small town (both 40%) and only 20% suburban. Fifty-three percent of Tier 2 schools were located in a small town (defined as a small, compactly settled area), while only 12% resided in an urban area of over 500,000 people, and 35% were located in suburban campuses (commuting distance from a city). In Tier 3, 50% of the schools were located in suburbia, while 20% were small town schools, and 30% were urban. Tier 4 schools did not follow the hypothesized pattern at all, with 50% small town, 17% suburban, and 33% urban.

Despite my predictions that suburban schools would fall in between small-town and urban schools in regards to frequency, this data shows that suburban schools are the least likely to be green. They occur least often in Tier 1 schools, more often in Tier 2 schools, and the most often in Tier 3 schools. Suburbia is notorious for its apathy, and this pattern only reinforces that stereotype. If viewed from a different angle, however, it seems as though location does *not* have a large impact on the success of a recycling program, for the average recycling quality rankings of each group fall within a few points of each other: urban, 58.6; suburban, 59.2; small town, 61.1. These numbers are not significantly different enough to differentiate among. More data is needed on this topic to determine whether or not location and program quality is correlated.



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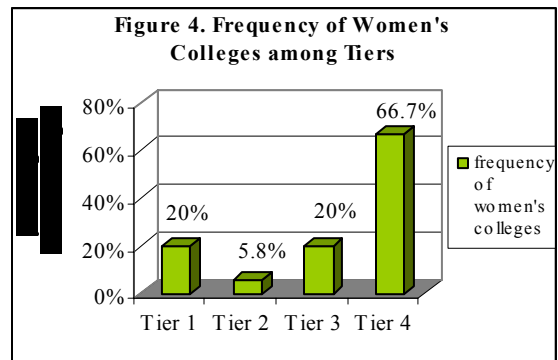
Table 4. Schools sorted by location type

Tier	Score	Schools	Location
1	94	Middlebury College	Small town
1	91	Mount Holyoke College	Small town
1	85	Bowdoin College	Small town
1	81	Amherst College	Small town
2	75	Claremont McKenna College	Small town
2	73	Carleton College	Small town
2	73	Wheaton College	Small town
2	72	Oberlin College	Small town
2	70	Grinnell College	Small town
2	68	Wesleyan University	Small town
2	66	Colby College	Small town
2	66	Williams College	Small town
2	63	Washington and Lee	Small town
3	58	Davidson College	Small town
3	53	Hamilton College	Small town
4	12	Harvey Mudd University	Small town
4	0	Colgate University	Small town
4	0	Regis College	Small town
1	90	Bates College	Suburban
1	88	Tufts University	Suburban
2	74	Brandeis University	Suburban
2	64	College of the Holy Cross	Suburban
2	62	Boston College	Suburban
2	62	Pomona College	Suburban
2	62	Wellesley College	Suburban
2	60	Haverford College	Suburban
3	59	Bryn Mawr College	Suburban
3	58	Vassar College	Suburban
3	52	Babson College	Suburban
3	50	Swarthmore College	Suburban
3	49	Worcester Polytechnic Institute	Suburban
4	0	Scripps College	Suburban
1	94	Northeastern University	Urban
1	92	Smith College	Urban
1	90	Harvard University	Urban
1	84	MIT	Urban
2	79	Boston University	Urban
2	75	UMASS Boston	Urban
3	55	Simmons College	Urban
3	42	Emerson College	Urban
3	32	Trinity College	Urban
4	2	Barnard College	Urban
4	0	Spelman College	Urban

1.2.4 Distribution of Women's Colleges

The high frequency of women's colleges in the lower tiers was an unexpected and disturbing pattern. Four out of six Tier 4 schools are women's colleges, while the other five were dispersed among the other three Tiers: two in Tier 3, one in Tier 2, and two in

Tier 1. I should note that the two women's colleges in Tier 1, Smith and Mount Holyoke, are maintained by the same 5-college recycling program, which wisely combines resources between several colleges in the area. This program originated not at Smith or Mount Holyoke,



but at UMASS Amherst, a large public co-educational university that is one of the other colleges in the 5-college system (Fowler, interview, 2003). Wellesley College is the lone Tier 2 school, but it falls in the lower half of the tier.

The average endowment of the nine women's colleges in the study, \$397.7 million, was significantly lower than the overall average of \$482.1 million. (The calculated overall average did not include the outliers listed in 1.2.1). The size of a school's endowment is correlated with the success of recycling programs, and so the lower average endowment may be one explanation for the low rate of successful recycling programs among women's colleges. (See Table 6.) However, while this may explain the frequency of women's colleges in the lower tiers, that explanation does not explain why the wealthier schools, like Wellesley, do not have more successful programs.

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Table 5. Women's Colleges ranked by Endowment

Tier	Score	School Name	Endowment (in millions)
2	62	Wellesley College	\$1,100.0
1	92	Smith College	\$917.0
3	59	Bryn Mawr College	\$437.2
1	91	Mount Holyoke College	\$399.7
4	0	Spelman College	\$228.9
4	0	Scripps College	\$184.5
3	55	Simmons College	\$149.0
4	2	Barnard College	\$138.4
4	0	Regis College	\$25.2
Average Endowment			\$397.7

Table 6. Quality Ranking of Recycling Programs at Women's Colleges

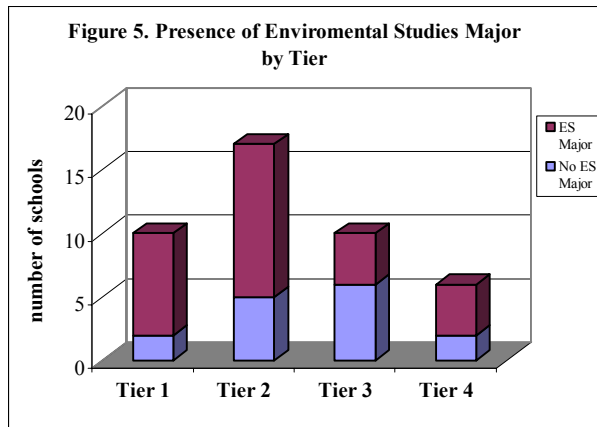
Tier	School Name	recycling program?	# recycled materials	age of program	recycling coordinator?	quality of website	Total score
Total Possible		20	30	20	15	15	100
1	Smith College	20	30	12	15	15	92
1	Mount Holyoke College	20	30	11	15	15	91
2	Wellesley College	20	15	12	5	10	62
3	Bryn Mawr College	20	15	10	5	9	59
3	Simmons College	20	10	10	0	15	55
4	Barnard College	nk	0	nk	2	0	2
4	Regis College	nk	0	nk	0	0	0
4	Scripps College	nk	0	nk	0	0	0
4	Spelman College	nk	0	nk	0	0	0

Why are women's colleges less environmentally aware than other schools? One possible explanation is that the central concern of the college began as a reaction to gender discrimination, an issue of social minority, and often these colleges now focus on other minority issues like racial, cultural, and sexual discrimination. This could explain why the focus of these schools remain solely on human concerns and are therefore often blind to environmental problems that require one to view the world as a whole, in a way that includes human effects on non-human entities. This apathy towards the environment is expressed by the lack of an adequate recycling program.

This topic will be discussed further in sections 2.4 and 2.5.

1.2.5 Presence of Environmental Studies Program

Not surprisingly, my data shows a relationship between the presence of an Environmental Studies major or minor and the quality of the recycling program. Eighty percent of Tier 1 schools had an Environmental Studies major, as opposed to 70% of Tier 2 schools, 40% of Tier 3 schools, and, always the exception, 66% of Tier 4 schools. At Wellesley, the founding of our Environmental Studies program has helped to solidify our



current environmental projects and inspire many new ones.

Table 4 lists the schools in order of the first year that an Environmental Studies major was officially offered. Some schools had majors that were differently named but addressed similar issues, such as majors in Environmental

Science or Environmental Analysis. Also included were interdepartmental majors (those that do not have their own department) and constituent majors, like the one at Bowdoin College, which cannot be majored in alone but complements the student's primary major (Payson, interview, 2003). The schools are further sorted by the date in which the first Environmental Studies non-major program appeared.

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Table 7. Schools ranked by founding date of Environmental Studies major

ES Major Since	ES Program Since	College	Tier	Score
1965	1960's	Middlebury College	1	94
1967	1967	Williams College	2	66
1971	1969	Bowdoin College	1	85
1971	1960's	Colby College	2	66
1981	1980's	Oberlin College	2	72
1984	1970's	Tufts University	1	88
1992	unknown	Boston University	2	79
1993	1990	Mount Holyoke College	1	91
1993	1991	Swarthmore College	3	50
1993	1960's	Simmons College	3	55
1994	1970's	Carleton College	2	73
1994	unknown	Claremont McKenna College	2	75
1994	1949	Barnard College	4	2
1995	1989	Bates College	1	90
1995	unknown	Northeastern University	1	94
1996	1982	Colgate University	4	0
1996	1991	Wheaton College	2	73
1997	1997	UMASS Boston	2	75
1999	1995	Vassar College	3	58
2001	1990's	Pomona College	2	62
2001	unknown	Wellesley College	2	62
unknown	unknown	Harvard University	1	90
unknown	unknown	MIT	1	84
unknown	unknown	Wesleyan University	2	68
unknown	unknown	Boston College	2	62
unknown	unknown	Trinity College	3	32
unknown	unknown	Scripps College	4	0
unknown	unknown	Spelman College	4	0
no major	1978	Grinnell College	2	70
no major	1983	Davidson College	3	58
no major	1993	Worcester Polytechnic Institute	3	49
no major	1998	Washington and Lee	2	63
no major	1960's	Hamilton College	3	53
no major	1980's	Amherst College	1	81
no major	1990's	Harvey Mudd University	4	12
no major	1996-7	Smith College	1	92
no major	unknown	Brandeis University	2	74
no major	unknown	College of the Holy Cross	2	64
no major	unknown	Bryn Mawr College	3	59
no major	unknown	Regis College	4	0
no major	no program	Haverford College	2	60
no major	no program	Babson College	3	52
no major	no program	Emerson College	3	42

1.3.0 Conclusions

Though many factors can affect the likelihood that a school will develop and sustain an effective recycling program, no single factor can determine the success of the program. Sustainability is, above all, a choice that individuals and institutions must make; it will not happen simply because of a combination of external components. The circumstantial factors I have examined here have the capability to make the campus atmosphere more or less conducive to starting a recycling program, but none guarantee success and none are impossible to overcome.

In order for a program to succeed on a long-term basis, it must have the financial support of the college administration. This, however, does not require a large endowment or an extremely flexible income; it only requires that the school decide that a recycling program is important enough to fund. Though it is true that it is easier to start and maintain a recycling program with a larger budget, this is merely a deterrent, and will not prevent the school from starting and maintaining an effective recycling program. It is the college administration that decides whether the program is important enough to be funded. If the program is a high priority, the school will find money to buy bins and pay staff. It will address environmental impacts when planning for new buildings or making new policies. If the environment is not important to the administration's vision of the mission of the college, it will be overlooked and under-funded, regardless of resources.

It cannot be denied that the environmental atmosphere of the campus is influenced by its location, its major offerings, and the composition of the student body. In addition to acting alone, these factors are also affected by each other, for the location and the strength of environmental academic programs draws certain types of students, who will, in turn, ensure that the environment remains a major campus issue. If the students feel that the environment is important, the school's policies and major offerings may respond accordingly. On the other hand, a poor or nonexistent environmental studies department will deter environmentally-minded students from attending, and since the creation of environmental programs is often due to student pressure, the low level of environmental interest in the student body will provide little motivation for the college's administration

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to reduce its environmental impact. Until there is a spark of energy that forces the college to improve its effect on the environment and its environmental course offerings, this sort of cycle will continue indefinitely.

If I were to redo this portion of the study, I would have included more schools, but with more definite data points. I would narrow my queries into objective, easily quantifiable data. I would also examine more closely the attitude of the student body and the administration, and determine whether it is the overall ethic of the population that affects the creation of a recycling program, and if the lack of such an ethic is an insurmountable obstacle. Regardless of these deficiencies, many of the patterns I located between schools allow us to further understand the obstacles we must overcome in order to achieve a sustainable society.

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2.0 The Details: Why Some Schools Succeed

As a complement to the larger study, which compares and contrasts data from 43 colleges and universities, the second section of this study examines three schools with successful recycling programs in more detail: Middlebury College, Bowdoin College, and Smith College. All are small-to-mid-sized prestigious liberal arts colleges ranked as Tier 1 institutions the previous section. The programs are then compared to my own school, Wellesley College, which ranked in the lower portion of Tier 2.

2.1 Middlebury College

Middlebury College is a mid-sized liberal arts college in rural Vermont with an undergraduate student population of 2,300 and a small graduate school. It is one of the top-ranked liberal arts institutions in the country, ranked eighth by US News and World Reports. With a \$666.8 million endowment and \$34,000 tuition, Middlebury's undergraduate student population is made up largely of private high school graduates. Middlebury's undergraduate student population is 52% female, and is primarily white, with minority students making up less than 15% of the student body, and only 8% of the total population being international students. Ninety-four percent of students live on campus, and campus life is vibrant and involving. Middlebury has a small graduate school which awards masters and doctoral degrees, but the focus of the college as a whole is primarily undergraduate. (Petersons.com, 2003.)

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In addition to being a highly-ranked educational institution, Middlebury is known for its “green” reputation. The institutionally supported recycling program at Middlebury is one of the major ways in which the school displays its commitment to environmental protection. The recycling program at Middlebury is consistent, widespread, and is a prominent feature around campus. Each office, classroom, and dorm room is provided with two color-coded bins: blue for recycling, and tan for trash. The blue bins collect every type of paper and cardboard, and all glass, plastic, and metal containers. While contamination is an issue with commingled bins such as these, I was assured that any paper that was not suitable for recycling was composted and thereby not returned to the waste stream. Since the bins are always present together and the color scheme is consistent, recycling is convenient for those who would not go out of their way to recycle. The bins’ constant presence and visual consistency account in part for Middlebury’s outstanding rate of recycling (Bisson, interview, 2003).

All refuse from these bins is collected by custodians and taken to Middlebury’s private recycling center, a barn-like structure a couple hundred yards away from the edge of campus. The center can recycle all types of paper, cardboard, and boxboard; cans and bottles of all materials (including waxed cartons); Styrofoam packing peanuts and overhead transparencies; batteries, electronics, printer cartridges, and fluorescent tubes; and compost and yard waste. Uncommon items like scrap metal and building materials can be collected at the recycling center and are dealt with accordingly. Students are employed to sort bottles and cans, collect recyclables around campus, and do other odd jobs. The center has two full-time employees, and is open five days a week (Bisson, interview. 2003).

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In addition to the actual collection of the recyclables, Middlebury's Office of Environmental Affairs connects campus environmental initiatives with the academic Environmental Studies program, and addresses Middlebury's environmental behavior as a whole. The Director of Environmental Affairs, Nan Jenks-Jay, who oversees all environmental initiatives, and the Campus Sustainability Coordinator (formerly the Environmental Coordinator, and before that, the Recycling Coordinator), Connie Leach Bisson, serve to influence the college to further expand its environmental outreach. Their office puts out a publication every year that acknowledges student and alumnae achievements, current initiatives, and plans for the future (Bisson, 2002).

In 1994, Middlebury president John McCardell declared the study of the Environment one of Middlebury's four "peaks of excellence," along with literary study, language study, and international study, and proceeded to create an ad hoc Committee on the Environment that prepared a report on ways in which the college could continue to improve the ES program and other environmental initiatives, like recycling (Bisson, 2002). In 1995, the Trustees adopted the following statement as a declaration of Middlebury's environmental priorities:

Middlebury College as a liberal arts institution is committed to environmental mindfulness and stewardship in all its activities. This commitment arises from a sense of concerned citizenship and moral duty and from a desire to teach and lead by example. The College gives a high priority to integrating environmental awareness and responsibility into the daily life of the institution. Respect and care for the environment, sustainable living, and intergenerational responsibility are among the fundamental values that guide planning, decision making, and procedures. All individuals in this academic community have personal responsibility for the way their actions affect the local and global environment (Middlebury College Handbook, 2003).

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This statement, combined with McCardell's declaration of the environmental peak of excellence, legitimized the goals of the campus environmental programs. From that point on, Middlebury has released several reports on the state of the campus environment, supported an environmental council, which addresses current campus environmental issues, and an environmental Task Force, which has created a five-year plan for the development of more environmental programs. In 2001, the Task Force presented its plan for the achievement of many impressive environmental goals, like establishing an emissions-neutral campus and renovating an existing building into an environmentally-sound environmental center. (Bisson, 2002.)

Due to the administrative commitment to sustainability, Middlebury is one of the greenest campuses in the country. This inclusion of the environment in the institution's value structure did not happen overnight, however. Middlebury has been developing its environmental awareness since 1931, when the Middlebury Outing Club was founded. Three decades later in 1965, at the very start of the mainstream environmental movement, Middlebury founded the first Environmental Studies program in the country. After the academic program was official, the college gradually created a series of committees addressing energy consumption and other environmental issues, but only began to attend to recycling in 1989, when a senior seminar class in Environmental Studies evaluated Middlebury's waste stream and presented a Recycling Plan to the administration. The college administration, already committed to the well-being of the environment, soon founded the recycling program. In 1994, the program was named "School Recycler of the Year" in Vermont (Bisson, 2002). In 2001, the college opened a new recycling center that

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was complete with balers, storage facilities, and a room for free reusables. The program now diverts roughly 60% of its waste from landfills and incinerators. Forty percent of Middlebury's total waste is food and yard waste, which is composted on-site (Bisson, interview, 2003).

Why is Middlebury's program so successful? The long-term commitment of both the administration and the ES department is the most obvious of answers, but are there other factors that have helped Middlebury achieve such an impressive level of sustainability? According to Part I of this paper, the type of location of the campus is highly correlated with the environmental awareness of the school. Middlebury is in rural Vermont, an hour from the closest major city. Tree-covered mountains, rivers, and forests surround the campus. The effect of this rural environment is two-fold. One, it attracts students who are drawn to nature, enjoy being far from "civilization," and as a result, often hold environmental values dear. Two, the overwhelming presence of the natural world at a place like Middlebury seems conducive to the development of environmental values and programs, because the "nature" one is trying to preserve is never more than a few feet away.

Another factor that was often related to a strong recycling program was the presence of an Environmental Studies program, and, as stated before, Middlebury's is the oldest in the country. The creation of a program in this field indicates at least a low-level commitment to the study of the environment, for it has officially recognized it as a field of academic study. In addition, the presence of a program that focuses the studies of students and faculty within the environmental field no doubt has an effect on the behavior of the

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college as a whole after it is established. Middlebury follows this model perfectly: first, it created a department, a decade later, it formed its first environmental committee, a few decades after that, it is one of the greenest campuses in the country (Bisson, 2002).

Middlebury College sets a good example for those only now starting a recycling program. We cannot rely on its methods alone, however, for Middlebury has had something that we don't: time. It has been slowly developing its environmental programs since the sixties, and unfortunately, we no longer have that luxury. The program at Middlebury as it stands now teaches us many things, however. Its organization, consistency, and complete integration into the infrastructure of the college are laudable, and they form a model that could (and should) be applied elsewhere. Middlebury is also a prime example of the necessity of administrative support, for when the president of the college officially designated the environment as a campus concern, environmental programs and initiatives blossomed. It is unclear what factors first influenced Middlebury to be an environmentally aware campus, but whomever or whatever it was initiated a chain-reaction that has benefited more people, programs, and organisms than can be named.

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2.2 Bowdoin College

Bowdoin College is a small liberal arts college on the ocean in Brunswick, Maine. With only 1,600 students and no graduate school, individual attention to each student is likely one of the factors that influenced US News and World Reports to rank the school as seventh among all liberal arts colleges in the country. It is extremely selective, with only 24% of applicants admitted. Like Middlebury, it is predominantly white; with less than 15% of students identifying themselves as minorities, and only 3% are international students. The majority of students live on campus, although 12% commute. (Petersons.com, 2003.) Bowdoin was “founded and endowed for the common good,” as its mission states (Bowdoin Mission Statement, 2003), which in part explains its commitment to reducing its environmental impact. Bowdoin has a well-known reputation as a green school, and for good reason: Bowdoin’s programs are some of the finest in the country.

Bowdoin’s recycling program is one manifestation of the school’s commitment to environmental issues. Though the bin system at Bowdoin is more complicated than the two-bin trash/recycling system at Middlebury, it is still successful and effective. In the dorms and offices, the housekeeping staff collects the recyclables and brings the materials out to be picked up, in addition to maintaining the recycling area. Twice a week, staff from Facilities Management, the same office that collects non-recycled waste, picks up the recyclables and transports them to the Brunswick town recycling center. In addition to the standard dorms, many Bowdoin students live in on-campus apartments, which have a separate, more complex collection system. Student employees are responsible for picking up these recyclables and bringing them to the recycling center. (Payson, interview, 2003.)

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While the college does not have an official relationship the local recycling center, it depends upon it to dispose of its recyclables. Bowdoin collects materials in five categories: high-grade paper (white paper, oaktag, envelopes); newspaper mix (newspaper, magazines, inserts, softbound books and directories), bottles and cans (refundable only), #2 plastic, and corrugated cardboard. Items like printer cartridges, disks, overhead slides, and Styrofoam peanuts are recycled at one or two central locations. Boxboard and non-refundable bottles and cans are not collected. (Payson, interview, 2003.)

One of the major strengths of Bowdoin's program is the presence of a Sustainability Coordinator position, now filled by Keisha Payson, a Bowdoin alumna. Her office, Sustainable Bowdoin, coordinates most aspects of environmentalism on campus. She is the central environmental consultant on administrative committees, organizes and educates the custodial staff and provides them with bins, educates the campus about environmental initiatives, and heads a mostly student committee in conjunction with her office. In addition, she is able to hire students to perform various tasks, including some collection of recyclables. Her position is "budget-neutral," which means that she is responsible for saving the college enough money through environmental initiatives after three years to pay for her salary. (Payson, interview, 2003; Sustainable Bowdoin website, 2003.)

Though the college chose to fund such a position, the fact that it has that type of budgetary stipulation indicates a less-than-full commitment to environmentalism, for it is not willing to directly include the office in its budget; it is asked to pay itself back. Though Bowdoin's commitment to the environment is not absolute, its efforts should still be

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commended. The school has gone so far as to draw up an official environmental mission statement, which reads,

Being mindful of our use of the Earth's natural resources, we are committed to leading by example to integrate environmental awareness and responsibility throughout the college community. The College shall seek to encourage conservation, recycling, and other sustainable practices in its daily decision making processes, and shall take into account, in the operations of the College, all appropriate economic, environmental, and social concerns (Bowdoin College, Environmental Mission Statement, 2003).

In both in its environmental mission and its official college mission, Bowdoin emphasizes environmental awareness, though the struggle between environmentalists and the administration is often unavoidable due to budget allocation constraints, among other factors. The Sustainability Coordinator is working to improve this, however, by both working with the college to improve its policies and continuously raising the campus's consciousness to keep the environment as a visible campus issue. (Payson, interview, 2003.)

The two environmental student organizations at Bowdoin, Evergreens and Sustainable Bowdoin, both have similar interests, but fulfill two essential niches on campus. The first is a student-only activist organization that explicitly pressures the administration to address environmental problems more fully and expand existing programs, and the second is affiliated with the college itself through the office of Sustainability, and works with the college to develop its programs and policies. On many occasions, it was the Evergreens that forced or shamed the college into forming new programs or initiatives, and Sustainable Bowdoin that continued the effort and worked out the details with the administration. In fact, the recycling program is one such example: the

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Evergreens wrote letters and rallied support, encouraging the college to expand the recycling program, and after the college agreed, Sustainable Bowdoin worked to make the program successful over the long term. Though membership between the groups often overlaps, the two groups (and their respective images on campus) have different purposes but a mutually beneficial relationship. (Payson, interview, 2003.)

In Part I of this study, I found that there is some correlation between location and quality of recycling programs, and Bowdoin, like Middlebury, is no exception. In a small ocean town in Maine, it is difficult to not to feel some connection to the environment. A location such as this not only influences one once in Brunswick, it draws environmentally-minded individuals to it. Bowdoin's mission states, "As a liberal arts college in Maine, Bowdoin assumes a particular responsibility to use nature as a resource for teaching and engaging students -- notably to help them obtain a broad sense of the natural environment, local and global, and the effects and the role of human beings regarding it." (Bowdoin Mission Statement, 2003.) Maine's environment has, in many ways, affected the state as a whole, for many people in Maine have a strong environmental ethic. This has most likely contributed to the programs at Maine colleges and universities, many of which are well known for their environmental initiatives. Such a location has no doubt encouraged the development of environmental programs at Bowdoin and contributed to their success.

Another important factor found in Part I was the presence of an Environmental Studies department, which influences the college in several conceivable ways. First, it attracts environmentally-minded students that both study environmental issues academically and are involved in starting environmental initiatives on campus. Second, the

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presence of an official department consolidates environmental allies, and brings interested students, faculty, and occasionally staff people together. Third, it is a way for the school to declare some kind of official interest in the study of environmental issues. At Bowdoin, the Environmental Studies program is one of the oldest in the country, founded in 1970. Like many ES programs, the major does not have its own department, for it draws from courses from many other departments. A Bowdoin student cannot major in Environmental Studies alone, for it is a coordinate major, which means that one would major in ES as a supplement to another one-department major.

Bowdoin's program is positively influenced by its natural location and its strong Environmental Studies Program, though it seems that the most powerful factor working in Bowdoin's favor is the centralizing nature of the Sustainable Bowdoin office. Both Middlebury and Bowdoin have administrative offices that address the environment, and both have extremely strong environmental programs. Which influenced the other more is not entirely clear, but it seems that where one is, the other follows soon after.

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2.3 Smith College

Smith College is a mid-sized liberal arts college for women in the mini-metropolis of Northampton, Massachusetts. Ranked 14th among liberal arts colleges by US News and World Reports and second only to Wellesley among women's colleges, Smith attracts some of the brightest women in the country. One-fifth of the student body identifies as a non-white minority, and 6% are international students. Most students live on campus (91%) and there are 2,665 undergraduates, in addition to a smattering of graduate and doctoral students. (Petersons.com, 2003.) Though the primary focus of Smith is not environmental issues, they nonetheless have a Tier 1 recycling program.

Between 1991, when Smith's recycling program had only existed for a year, and 2002, its recycling rate has risen over 30%. They now recycle roughly 43% of their total waste stream. Like both Middlebury and Bowdoin, Smith's recycling program is consistent across campus, and the bins are labeled as such. Whether in the residential houses or academic buildings, it is clear that the same materials can be recycled, which greatly reduces confusion among users. They have three main categories of recyclables (in addition to the less common items like batteries, electronics, and foam peanuts): Mixed Paper, which includes all kinds of paper including magazines, newspapers, and brown paper; Corrugated Cardboard; and Bottles and Cans, which includes glass, plastic, tin, aluminum, and waxed cartons. In addition to the labels on the bins, Smith's recycling webpage clearly outlines the recycling procedure. The program is well institutionalized, for recycling bins are counted in each dorm room as furniture (meaning that if one disappears, the student living in that room pays for its replacement), and the college has

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invested in a dump-style truck whose primary purpose is to collect recyclables. (Fowler, interview, 2003.)

In both residential and academic buildings, individuals are responsible for bringing their recyclables to the main recycling location in their building. The recycling is collected from the campus by Smith staff with the help of their recycling truck. The truck collects paper and cardboard on some days and

bottles and cans on other days. The materials

are then brought to the Springfield Materials

Recycling Facility (MRF) in Springfield,

Massachusetts, which markets materials through

the Institutional Recycling Network (IRN). By

the costs avoided by recycling and through the sale of its paper and cardboard, Smith has been able to purchase six balers over the past three years (a total of \$28,000), which ease collection and transportation of the materials, and actually increase the resale value of the cardboard. (Fowler, interview, 2003.)



Smith's recycling truck in action.

The program is strengthened by its involvement in the five-college recycling program. Though it originated at the University of Massachusetts at Amherst in 1988, the university no longer includes itself in the program. The other four schools in Five Colleges Incorporated, Amherst College, Mount Holyoke College, Hampshire College, and Smith College, share a recycling coordinator and various other organizational resources among them, and the UMass Amherst recycling coordinator is in frequent contact with the five-college recycling coordinator. The overall program is organized and driven by the 5-

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college recycling committee, headed by the 5-college recycling coordinator, a position currently held by Angie Fowler. All of the materials from the five schools are brought to the Springfield MRF where they are sold to vendors that return the materials to use.

The 5-college recycling coordinator has a valuable role to play in the success of the program at Smith, for she acts as the liaison among the five colleges. Fowler calls herself a “waste management-recycling consultant, monitor, facilitator, [and] buyer for the Five Colleges.” (Fowler, email, 2003.) She transmits information between the schools, and is responsible for keeping the colleges in compliance with current regulations. She is the central point person for the four involved colleges, and she is instrumental in implementing programming and educational initiatives. Her salary is split four ways among the four colleges, though the benefits of having a coordinator that has access to so much information far outweigh the costs. To remain well-informed, she attends conferences on related topics, and is a member of many college/university information exchanges which keep her further up to date. (Fowler, interview, 2003.)

One obstacle that Smith has not had to deal with intensively is a college administration that is opposed to starting or funding a recycling program. According to Fowler, she has never had to fight with the administration to prove that recycling is worthwhile. The staff people in the physical plant, the dining halls, and grounds crew are all aware of the importance of recycling, and all are reasonably well-informed about the recycling process. In addition, Smith’s new president, Carol Christ, has already expressed interest in further developing Smith’s environmental programming, and did a one-minute segment in Smith’s most recent recycling video. An important resource, of course, was the

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five-college recycling program, which was essentially an expansion of one successful program. This top-down approach is far more efficient than students trying to convince the administration that recycling is important, and Smith's students are fortunate in that they avoided adversarial relations with the college.

Though Smith does not have an Environmental Studies Major, a minor in Environmental Science and Policy has been offered since 1996. It started as an offshoot of the Geology department and was called "Environmental Science," but it soon grew to include policy and other social sciences. The minor is relatively new at Smith, and little academic environmental interest existed before the minor was founded. Smith's recycling program was started well before the minor, most likely because it was essentially organized outside of Smith.

Location has also been shown to be correlated with successful recycling programs, with urban and small-town schools being more likely to start and maintain an effective recycling program. Smith is located in what is considered an urban area, and though Northampton is what is considered a small city, the surrounding area is decidedly rural. Perhaps the success of Smith's recycling program has been influenced by this interesting mix of urban and small-town life, juxtaposing the urban necessity of conservation with the appreciation of nature that comes with living in a rural area.

My research also suggested that women's colleges are far less likely to start recycling programs, with four of the nine women's colleges I examined falling into Tier four. One of the reasons that Smith was chosen to be examined in further detail was to determine why it was that some women's colleges, like Smith, had a flourishing, Tier 1

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recycling program. However, the two women's colleges that ranked in Tier 1, Smith and Mount Holyoke, are both a part of the 5-college exchange, and therefore part of the 5-college recycling program. The successful programs that exist at these two schools, while no doubt in part the product of effort and commitment from the individual schools, was *started* elsewhere. The base for the program was begun at a large, public, co-ed school and not at either of the women's colleges in the consortium.

Is this a coincidence? I have no concrete explanation for why it is that none of the nine women's colleges I examined have started their own successful program. One explanation might be, as I briefly outlined in Part I, that the primary focus of women's colleges are social, racial, and sexual minorities (within which women are included). Therefore, all issues that are not directly humanitarian, like environmental concerns, are lower priorities for the school to address. While Smith's program should be applauded, had it not been a part of the 5-college exchange, would it have been as successful, or would it have even been started at all? Only further study on this topic will answer the many questions this pattern raises, and so this question remains unexplained. Smith's recycling program raises some fascinating questions about the initiatives taken by women's college in regards to the environment. It runs its program successfully, but the program's origin in some ways eclipses its success. Why is it that none of the nine women's colleges I examined had started and maintained an effective recycling program?

Wellesley can learn much from Smith's recycling program, most notably the importance of an effective, informed recycling coordinator. The shared information between the colleges has definitely made Smith's program much stronger, and no doubt,

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much more sustainable. In addition, the lack of conflict with the administration over the recycling program eased the creation of the program, reinforcing the importance of administrative support. Since Smith is also a prestigious college for women, many of the strategies that worked at Smith would in all likelihood work similarly at Wellesley, due to the common atmosphere.

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2.4 Wellesley College

Wellesley College is a small liberal arts college for women located thirteen miles outside of Boston in Wellesley, Massachusetts. Ranked fourth among liberal arts colleges and first among women's colleges (US News and World Reports, 2003), Wellesley offers a first-rate education for "women who will make a difference in the world," as its motto states (Wellesley College website, 2003). Wellesley has a significant minority population, with 42% of the student population identifying as a racial minority, and 9% percent of the student body is international. Wellesley also has one of the highest endowments among liberal arts colleges, \$1.1 billion in its endowment. Ninety-three percent of Wellesley's 2,300 students live on campus in residence halls, and the vast majority of those women attend Wellesley full-time. Wellesley is known for its commitment to tolerance, diversity, and social awareness. (Wellesley College website, 2003; Petersons.com, 2003.)

Even with these strengths, Wellesley's recycling program ranked in the lower end of Tier 2, with a score of 62 out of 100. My question is this: why would such a socially-active campus lack such a rudimentary environmental program? Several factors may have had a role in shaping Wellesley's attitude towards the environment, among them its suburban location, the young age of the environmental studies program, and its status as a college for women. Wellesley does have a basic recycling program, but it recovers only a small proportion of potentially recyclable materials. According to the waste audit done in the spring of 2002, roughly 50% of Wellesley's waste stream is easily recyclable¹.

¹ Categories consisted of mixed paper, cardboard, boxboard, plastic, glass, aluminum, tin, scrap metal, batteries, and organic waste.

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Despite its inadequacies, Wellesley's recycling program is not lacking in age. Recycling was sanctioned twelve years ago by Academic Council, though little organizational action was taken after the motion passed. The system, basic at best, has not changed or expanded since 1991; in fact, for some years the program was essentially dormant. In the residence halls, an elected recycling representative collects paper from bins on each floor and brings the materials out to a designated pick-up location. The recycling in academic buildings and offices works in a similar way: individuals bring their recyclables to a central location where the custodians collect them and bring them to a nearby collection point. The materials are picked-up by one man, Jim Ralli, a Wellesley staff member with numerous other positions and responsibilities, who collects the materials once a week and transport them to the Wellesley Recycling and Disposal Facility (RDF).

The Wellesley RDF, affectionately referred to as "the dump," is a state-of-the-art recycling facility that recycles nearly everything: paper products (including magazines and newspaper), cardboard, boxboard, brown paper, glass, plastics (separated into bottles, non-bottles, and natural, translucent plastics), and aluminum and steel cans, in addition to more unusual materials like alkaline and lithium batteries, electronics, all sorts of scrap metal, appliances, waste oil, paint, and eyeglasses. There is a composting and yard waste facility, in addition to a book exchange and a place to deposit potential reusables like furniture and clothing. The facility is well used by the town, and it encourages businesses (including the college), as well as individuals, to bring their recyclables and trash to the facility.

Wellesley does bring what recyclables it collects to the facility, but there is no official

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relationship and the college does not take advantage of many of the resources available there.

There are several areas in which Wellesley's recycling program could easily improve. First, the recycling standards are not well known. Many faculty and staff members are unsure of what can be recycled (some even believe that only white office paper is allowed), while in actuality, nearly every kind of paper can be included in the same bin. Second, there is no central point person who is responsible for organizing the program, so problems with the program are not solved, questions about the program go unanswered, and incoming students, staff, and faculty members are not educated about the process of recycling. Third, there is no designated budget for the upkeep of the program, so bins that disappear or break cannot be replaced easily. Fourth, the program is a low priority for all individuals and departments involved. Recycling reps often only take out the recycling when they have time, custodians' job descriptions list recycling as an explicit low or last priority, and Jim Ralli is paid overtime to pick up the recycling, indicating that recycling is an extra activity that can be eliminated during busy weeks. Lastly, there is no enforcement of the recycling program; recycling reps, custodians, and even Mr. Ralli are not reprimanded for failing to recycle, and during the years that the program was essentially inactive there was no administrative effort to repair or improve the program.

Since a basic structure already exists, improvements could be easily and relatively inexpensively made. This past year, a new multi-constituency environmental organization, Wellesley Energy and Environmental Defense (WEED), has worked to re-establish recycling in the residence halls and educate students about the materials that can be

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recycled. WEED raised money from many sources, supplemented by a grant from the National Wildlife Federation, in order to purchase bins to replace those that were missing and to create and post signs that described what could be recycled (office paper, magazines, newspaper, brown paper, boxboard, and cardboard).

Since Mr. Ralli has continued to do his weekly pickup of recyclables, the underlying structure was still there for the students to work with. They organized the reps and trained them, and after one academic year, a one-dumpster waste audit of a dorm with an active recycling representative revealed that nearly half of mixed paper was recycled, an impressive improvement to say the least. In addition, some recycling reps have started collecting, sorting, and transporting bottles and cans to the Wellesley RDF, and a can/bottle recycling competition was held this year between dorms, with the support of College Government. Like the rest of the program's current success, this latest expansion is dependent entirely upon student effort and interest, which is not a reliable source of energy and organization, since students leave after four years, and their interests and their time constraints change.

Why is the structure of Wellesley's program so poor? The previous section of my research suggests that the presence of an Environmental Studies program or department influences the creation of an effective recycling program. This may in part explain why Wellesley's program is not all that it could be, for its Environmental Studies program is graduating its first majors this year, and was only founded two years ago in 2001. Though the recycling program was founded a decade earlier, it is largely because of the Environmental Studies department and its committed faculty that WEED has been so

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successful in re-establishing the recycling program in the dorms. The department also accounts for the increased interest in the environment on campus, for it binds together environmentally minded students and faculty in a way that gives the group more strength and stability.

Another factor that may have made it more difficult for Wellesley to establish environmental programs is its suburban location. My research indicated a slight correlation between suburban schools and imperfect or non-existent recycling programs, and Wellesley, as a suburb of Boston, meshes with that pattern. Suburban campuses may be deficient in this area for two reasons. Suburban areas are infamous because of the negative stereotypes associated with them: their social apathy, their wealth, and their disregard for their effect on the environment. The town of Wellesley is no exception, with its sprawling development, oversized homes, and abundant sport utility vehicles. This type of environment has likely reinforced the college's apathy for environmental issues, and dampered any movements towards environmental improvements.

In addition, Wellesley is a women's college, and my research indicates that women's colleges rarely start and maintain effective recycling programs. Wellesley ranks in Tier 2, and the two Tier 1-ranked women's colleges had programs that were started elsewhere.² It is possible that the humanitarian and minority-centric atmosphere that often dominates women's colleges accounts for both their strengths in dealing with racial, gender, and sexual discrimination, but also accounts for their near ignorance of environmental issues. Wellesley is one of the most racially diverse colleges in the country,

² Refer to the section detailing the program at Smith College.

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and race and ethnicity is definitely the dominating issue on campus. While this is in most ways positive, so much attention towards one body of issues is sure to divert attention from other equally important issues, like environmental degradation.

Wellesley has the resources and the history of social interest to reduce its environmental impact. It must merely make that commitment. The environment is not one of those issues you can choose whether or not to have a position on, for doing nothing about degradation is allowing more to occur. As has been emphasized by this paper, choice is one of the environmental cause's most powerful allies. Wellesley must *choose* to reduce its environmental impact through recycling. None of these factors make as significant of an impact as the choice to behave in an environmentally sound manner. There are many "low-hanging fruit" that Wellesley could take advantage of that would make a large environmental impact with minimal costs.

3.0 Recommendations for the improvement of Wellesley College's Recycling Program

Based on the success of the recycling programs at Middlebury, Brandeis, and Smith, I have compiled a comprehensive list of recommendations that would aid Wellesley in reorganizing and improving its recycling program. It is essential that Wellesley work to improve its recycling program, for it is the first step towards sustainability, and it is Wellesley's responsibility as an institution of higher education to set a positive example for the country to follow. The following are suggestions for the improvement of Wellesley's recycling program.

I. Hire environmental coordinator who would:

- a. serve as an environmental consultant for college policies
- b. organize (and pay) residence hall recycling representatives
- c. serve as contact person for queries and bin replacements
- d. educate custodians
- e. hold an informed administrative position
- f. stayed informed about current regulations, attend conferences, and be in contact with other schools
- g. address other environmental issues

II. Establish an official system for the collection of recyclables that:

- a. picked up recyclables at official, consistent times and days (during the work day)
- b. involves more staff members in the collection
- c. uses a specialized, labeled vehicle for the collection of recyclables
- d. raises priority level of recycling in academic building custodians' job description

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- e. would have some way of measuring the quantity of recyclables and the ratio of trash to recycled.

III. Establish a department for the program that would:

- a. be a sub-department of Environmental Health & Safety, Custodial Services, *or* be a small independent department in the physical plant
- b. serve as reference for on and off-campus people
- c. address other environmental issues, like energy and water consumption, and work to include environmental issues in the standard curriculum

IV. Residence hall recycling representatives would:

- a. be paid for two hours of work per week (out of environmental coordinator's budget)
- b. attend bi-annual training sessions
- c. meet once a month
- d. organize other recycling opportunities, including competitions, drives, and recycling at the Tanner and Ruhlman conferences (with WEED)

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4.0 Conclusion

Recycling programs are often the first indication that a school is considering its environmental impact, for they are relatively easy and inexpensive to implement, and because they are one of the few ways that an institution can begin to account for resource consumption, air and water pollution, waste issues, and land use issues, all at once. As all of the schools studied in detail indicate, a recycling program is an essential first step towards institutional sustainability. Improving Wellesley's program significantly would not take excessive time or resources, since the basic structure already exists. If Wellesley College is to truly produce women "who will make a difference in the world," it must begin to account for the negative difference it is making in the world. The first step towards this goal is to revise and improve our current recycling program.

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