
**EXPLORATORY RESEARCH INTO THE ATTITUDES AND BEHAVIOURS OF
DALHOUSIE FACULTY OF ARTS AND SOCIAL SCIENCES SURROUNDING
ENVIRONMENTAL PRACTICES AND POSSIBLE CHANGES TO DECREASE
THE FACULTY'S IMPACT ON THE ENVIRONMENT**

**Suzanne Clarke - BSc. Microbiology & Sociology, minor Environmental Studies
Alyssa Forman - BA. IDS & Spanish, minor Environmental Studies
Mike Leonard - BSc. Environmental Science & IDS
Sarah Warren - BA. English, minor Environmental Studies**

ABSTRACT

Dalhousie University has an incredible opportunity and responsibility to influence and shape the way its faculty, staff and students choose to live and face the decisions they are confronted with daily. Dalhousie must be the very epitome of positive economic, social and environmental decision making; leading by example to fulfill its role as an institution of higher learning. Through exploratory research, a review of Dalhousie's policies, literature and other universities practices and studies that were performed, it was very evident that a lack of information surrounding the actions being taken on a faculty level at Dalhousie did not exist. In the spirit of the Greening the Campus initiatives, this research project strived to help eliminate this information gap by conducting an exploratory examination, focused on faculty members through face-to-face self-administered surveys. The objective of the project was to ascertain the environmentally sustainable behaviours, awareness and attitudes of faculty, while also providing base-line information for the support and development of future research initiatives. The population of focus was the Faculty of Arts and Social Sciences (FASS), with a sampling frame of full-time professors selected by simple random sampling. The survey combined both quantitative and qualitative questions and was analyzed using a variety of methods. The results provided a high level of confidence while also being reliable and internally and catalytically valid. The data gathered was used to understand faculty practices and beliefs, while also producing achievable, strategic recommendations for the FASS, divided into short, medium and long term goals. Through the implementation of these recommendations, the FASS will move closer to realizing the environmental commitments of Dalhousie University, and set an example as an environmentally sustainable and responsible faculty within Dalhousie and across Canada.

TABLE OF CONTENTS

1.0 Introduction	p. 2
1.1 Definitions	p. 7
2.0 Methods	p. 8
2.1 Literature and Policy Review	p. 8
2.2 Survey	p. 9
2.3 Procedure	p.15
3.0 Results	p.17
4.0 Discussion and Recommendations	p.23
5.0 Conclusion	p.31
6.0 Work Cited	p.34
The Dalhousie Tree of Authority	APPENDIX A
Systems Analysis	APPENDIX B
Project Analysis	APPENDIX C
Pilot Test Result Overview	APPENDIX D
Literature/Policy Review	APPENDIX E
Initial Email to Selected Sample Faculty & Revised Email	APPENDIX F
Pre Survey Participation Letter	APPEDNIX G
Faculty of Arts and Social Sciences (FASS) Survey	APPENDIX H
Post Survey Thank-you Letter	APPENDIX I
Quantitative Results of Survey Questions	APPENDIX K
Qualitative Results of Survey Questions	APPENDIX L
Ethics Form	APPENDIX M

1.0 INTRODUCTION

As institutions for higher learning, universities carry the tremendous responsibility of educating their students to become not only better versed in their chosen field of study, but also responsible for the way in which this knowledge is used. They must be prepared to function as valuable, positive contributors to society and learn to make decisions that may affect many more than just themselves. The Association of Universities for a Sustainable Future (USLF) has recognized this in stating that,

"Universities educate most of the people who develop and manage society's institutions. For this reason, universities bear profound responsibilities to increase the awareness, knowledge, technologies and tools to create an environmentally sustainable future."

-1990

Dalhousie University is one such institution charged with this immense responsibility. It is a microcosm of Canadian society with great diversity among its administration, faculty and student population. Therefore, it must exemplify the positive economic, social and environmental practices that these groups will be expected to emulate as members of society at large. Providing such a service and accommodation to thousands of people each year requires a vast amount of organization, energy and resources, which inevitably produces an incredible amount of waste. It is within this enormous process that the outcomes and impacts of decisions are truly felt in the natural environment, such that interconnectedness of universities and the natural environment that sustains them needs to be recognized. Dalhousie's senate did this almost seventeen years ago when it adopted a formal environmental policy in 1990 (APPENDIX E) in an effort to curtail the numerous unsustainable practices that undoubtedly exist at such a large institution. However, creating such a policy is one thing; actually implementing the necessary steps for adherence is another. Through Environmental Science 3502, and as part of the Greening the Campus initiative, our group sought to learn more about this policy in relation to the attitudes and behaviours of the university population; more specifically, we focused on the faculty and the role they play with respect to environmentally responsible

decision-making. After completing an extensive literature review concerning previous environmental initiatives and projects (APPENDIX C), we encountered a significant problem surrounding the lack of information and awareness on environmental policies and practices within some faculties at Dalhousie University. Through this we were able to identify a need for further research in order to help close the gap between what is known about existing policies, and what is actively being done in adherence. A fundamental reason for completing this research is the simple fact that if faculty are unaware of any environmental policies and commitments that exist, then how can they be expected to comply. Faculty represent an integral part in the structure of a university and are also connected to the surrounding community (Fig. 1.1). They act as an intermediary between administration and students, holding a vast amount of influence within each of those realms. This type of research also allowed us to take an essential step toward understanding areas of practice that may already exist, which can then be used as positive examples along with practices that could be lacking. Furthermore, before any truly effective changes can be made, it is necessary to identify the paradigm under which these would be implemented. As with many social endeavors, the support and consensus of the affected population is paramount to the success of any initiative.

While it would have been ideal to measure these factors across all members of the university population, including administration, faculty, staff and students, we were operating under resource and temporal constraints.

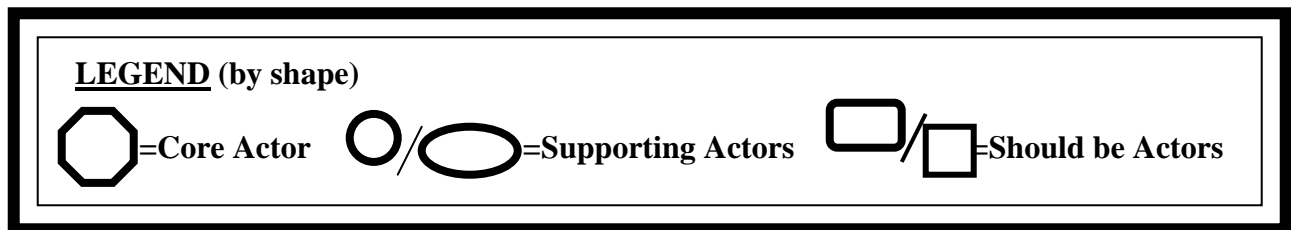
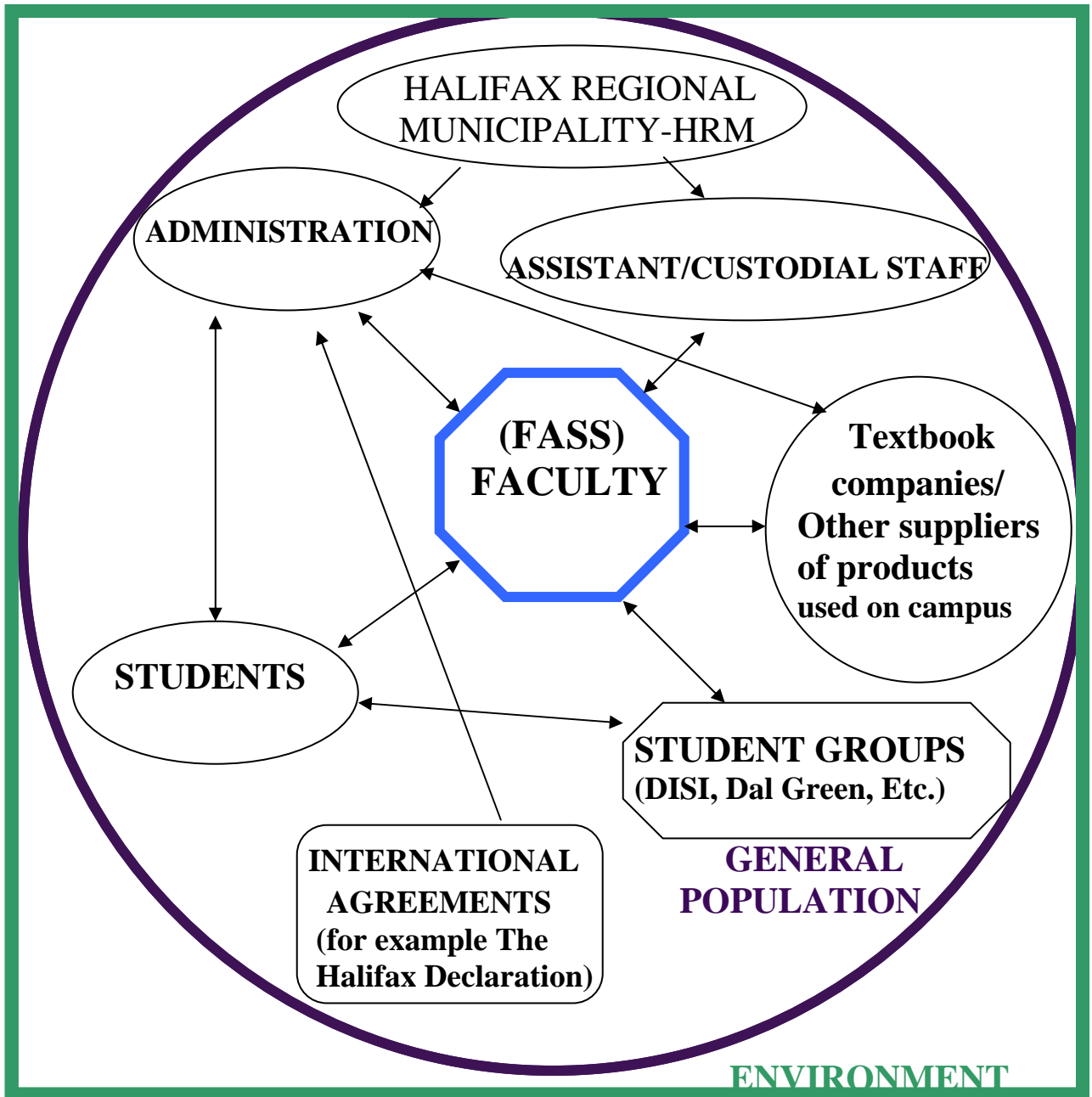


Figure 1.1 - Faculty's Actor System Web. (Explained further in APPENDIX B)

As such, we chose to focus our research on the Faculty of Arts and Social Science (FASS), and strove to answer two critical questions: What environmental policies and problems exist at Dalhousie and within FASS; and is there congruence between these and current environmental practices within FASS? As a result, our first objective was to investigate the existence of environmental policies and commitments at Dalhousie University, and outline, in detail, what each included. We then completed a similar review within the FASS surrounding any possible environmental policy creation and implementation. We also undertook an exploration into the current attitudes and behaviours of FASS faculty members with respect to environmental issues at Dalhousie and within their faculty, as well as any significant day-to-day environmentally responsible practices. Lastly, we also gathered information to help measure the possibility of developing and delivering environmentally inclusive curriculum, not only within FASS, but also the undergraduate program as a whole.

The purpose of our research was to determine information and awareness gaps among FASS faculty members with regards to environmental policies and practices. We then examined these existing or lacking sustainable practices to identify some positive and negative behaviours that could be followed or avoided. Having completed this stage, we then made several recommendations on separate temporal levels, including long, medium and short-term goals. With these goals we were able to provide a strategically focused approach that best suited the areas for improvement highlighted through our information gathering. Finally, coming full circle to our original problem, this data and information can

now be used as a benchmark for any future research into our specific area of interest.

The following report will delve into our research initiative, starting with an in depth review of our methods and procedures, including a description of our sample, instrumentation, justification of our approach, and some limiting factors. We will then present our results and provide a complete and comprehensive analysis, followed by a discussion of our significant findings with theoretical and practical implications. Finally, we will present our recommendations in relation to these results and subsequent discussion, with suggestions for further research. It was our goal to shed some light on the environmental attitudes and behaviours within the Faculty of Arts and Social Science, and make recommendations on how these can be publicized and improved. Ultimately, through this endeavor, we were able to achieve this and so much more.

1.1 DEFINITIONS

Nominal terms:

- **Faculty of Arts and Social Sciences (FASS):** All faculty members of Dalhousie's Arts and Social Sciences department will represent the population (APPENDIX A).
- **Policy:** A formal consensus that is usually written, concerning a standard for day-to-day activities, and specifically those that may exist in the Faculty of Arts and Social Science.
- **Curriculum:** The specific content and material delivered to students as part of their formal course or program of study.
- **Physical Decisions:** decisions made by faculty members concerning specific practices that can be observed, including recycling, double-sided printing or on-line reading.

Operational terms:

- **Faculty of Arts and Social Sciences:** All faculty members of Dalhousie's Arts and Social Science department that have been listed within the Dalhousie course calendar for 2006/2007.
- **Policy:** Through the literature review and survey, any applicable policies that may exist in the FASS and at Dalhousie University, concerning environmentally sound practices, will be discovered and incorporated into the formulation of final recommendations.
- **Curriculum:** Specific questions included in the survey will determine whether or not faculty members of the FASS currently incorporate environmental issues into their course curriculum. They will also indicate an approach that would be conducive to the proliferation of such material either through class integration, or the installation of a mandatory environmental course for all Dalhousie students.
- **Physical Decisions:** This research initiative will investigate the daily environmental choices made by members of the Faculty of Arts and Social Sciences as indicated in the survey. These include, but are not limited to, double sided printing, recycling, and the reusing of scrap paper. This information will be gathered through a self-administered survey.

2.0 METHODS

2.1 Literature and Policy Reviews

Before initiating any research within the FASS at Dalhousie, we felt that it was essential for a literature review of current policies that Dalhousie has made or signed, to be performed (APPENDIX E). A web search and review of what other university's have done or are currently doing across North America was also performed to increase our knowledge of possible suggestions and current practices at other universities. Previous environmental problem solving course projects were assessed to gain an understanding of good technique and what previous research, if any, had been done surrounding our topic (APPENDIX C).

All of these policy and literature reviews proved to be quite beneficial in our understanding and recommendation making for this project, and also influenced the types of questions asked in the faculty survey we performed.

2.2 Survey for Faculty

The intention of our survey was to gain an understanding of the opinions and observations of daily environmental practices and behaviors according to the FASS as previously defined. This information was relevant to the understanding of our problem because it provided a basis for recommending solutions that are useful and most likely to be accepted and implemented into the FASS policies, courses and daily activities. In order to effectively achieve this essential data collection, we conducted a faculty survey to attain both qualitative and quantitative data (APPENDIX H), incorporating both open and closed questions. The former allowed respondents to contribute personal suggestions and/or feedback, and the latter, allowed for a categorical response style, ensuring that the categories were mutually exclusive and exhaustive (Palys, 2003).

We originally planned to distribute at least 70 surveys by hand to each chosen faculty member in our sample. This number was chosen since 197 people were listed in the Dalhousie calendar as belonging to and or working in the FASS as faculty members ("Dalhousie University Calendar", 2006). The calendar was used as our source of information because it contained the most up to date information that we had access to. The population of 197 people included all full time faculty (listed or cross listed) within the faculty departments, programs or schools. Faculty not included in the population were Emeriti, visiting or

honourary professors and also any lecturers or full-time instructors. This sample frame was chosen because we felt that it would provide the most useful information, provided by people that were presumably easy to access and also had a real understanding of how their departments/schools and programs worked within the FASS and furthermore, within Dalhousie as a whole. When an online calculator was used to determine what number of surveys would be required to obtain a 95 % confidence level with a confidence interval of 10, 70 was the sample size that was calculated (Creative Research Centers, 2003). Therefore, our total sample size was 120 people selected at random from the population in hopes of collecting the desired number of returned surveys.

Through the surveying process however, we discovered that some of the faculty considered part of our survey population were in fact no longer eligible members of the population in question, because they had retired for example, or were never actually members of the population (APPENDIX K). This latter category of ineligible members included students who should have been classified differently within the calendar as well. While these sample results will be further discussed later, what is important to recognize is that 61 surveys were completed and 11.6 % of the original sample was in fact not members of the population in question. Extrapolating these results to the original population number, suggests that our original population in fact consisted of 174 and not 197 (11.6 percent less people). With this new population size in mind, the sample size required to achieve a confidence level of 95 percent with a confidence interval of 10 was 62 returned surveys (Creative Resource Center, 2003). The

sample frame can be defined as all faculty members that can be considered apart of the FASS as previously defined (APPENDIX A). The faculty members were chosen by a simple random sampling technique from within this sampling frame, wherein we ensured that chance governs the selection process, and every sampling element was given an equal probability of being selected (Palys, 2003. 128). Specifically, we wrote the names of all faculty candidates and picked 120 from a hat. This probabilistic technique was optimal since it achieved a formally representative sample and ensured homogeneity between the sample and the population, while significantly reducing the possibility of sampling error (Palys, 2003. 128).

Although somewhat laborious, we believe that a self-administrating face-to face method would yield a higher response rate (Palys, 2003. 153). Furthermore, by performing this survey our group was able to gather more useful data from a much higher number of people than could have been achieved by other techniques such as interviews. It also allowed us to be present during the administration of the survey so as to clear up any misunderstandings or ambiguities that the faculty member may have encountered (Palys, 2003. 151). We were also able to ensure that the proper person was completing the survey, a condition that was not met in some of our reviewed projects (Beringer et al., 2006. 7). The number of surveys that were administered allowed us to obtain one survey short of a confidence level of 95% with a confidence interval of 10 based on the size of the sampling frame previously explained.

Precautionary consideration was employed in ensuring respondent's anonymity by omitting any form of personal questions. Specifically, the raw data received through the surveys was reviewed by our group members only and used for no other purpose than this research project. Data was coded and compiled in a manner that is easy to read. Results have been included within the appendix in detail and summarized below, in hopes of allowing the reader to have a clear understanding of what information was obtained. More importantly, it will help increase this projects reliability, since secondary analysis of results can now be achieved by a third party if needed or requested. Tremendous precaution was also taken to maintain minimal bias. One way that we originally planned on achieving this, was by excluding the fact that the survey was for an environmental Greening the Campus course, so as to not sway participant responses. We had planned on informing participants that we were students performing this survey for the purposes of a problem-solving course, but discovered participants would not partake without more information. This forced us to change our initial email asking for participation from the selected sample, to include the necessary information (APPENDIX F).

The information collected from the surveys was aggregated with the intention of evaluating and exploring familiarity of environmental policies with claimed practices. This process of data analysis and synthesis helped us greatly. We believe that faculty members have the potential power to instill environmental consciousness, for example, if a professor only accepts essays written on recycled paper then student's behavior will change accordingly. It is hoped that

such behavior becomes habitual in the daily practices of students, thus substantiating catalytic validity (Palys, 2003). Fundamentally, it is hoped that such habits are accompanied by a conscious understanding of why and how it is helping make our campus more sustainable. These changes in opinions and practices, as well as recognition of current environmental beliefs, can have an outwardly and expansive effect not only on students, but also on other faculties and the administration of Dalhousie. The information collected will help move towards making positive changes.

Due to the nature of our exploratory research question, we were aware that we may not achieve a large amount of external validity. The observations we obtained cannot be generalized to include other faculties or the university as a whole. However, because we were performing this research in an exploratory manner with a sufficient sample size, results can be used to gain an understanding of whether or not suggestions should be made implying a need for expansion of this research to include the whole campus or changes within the FASS itself. Through the conclusions of the research, we hope that eventual external validity may be achieved. Internal validity is quite thoroughly obtained because the sample frame is completely inclusive of the population in question. Internal validity is especially high because a good confidence level and interval were achieved. Due to the approaches used in this research and the results soon to be observed, actionable recommendations were achieved allowing for catalytic validity to be obtained. Finally, because the survey methods and results have been made available for future research, further reliability has been ensured.

The three main limitations that existed through out this research involved the accuracy of the Dalhousie Calendar, the availability of professors and the short amount of time available to complete the research. The Dalhousie calendar, as already previously discussed, was the most influential limitation, because it affected who we included in the sample, what sample size was chosen and how many surveys we hoped to collect. The calendar was used because it was the best source we had available for collecting all the names of eligible faculty within the FASS. The availability of professors was also a limitation, especially since we aimed to perform face-to-face self-administered questionnaires. Often professors would have only one set of office hours a week, and understandably would dedicate that time first to their own students. Furthermore, because quite a few professors were on conference, sabbatical or other forms of leave, their availability became nearly nonexistent or in most cases unattainable. The third limitation overall was time and it affected how many surveys that we had completed, how many pilot tests were possible and in general how smoothly the research process occurred.

The delimitations that we put in place involved making the survey exclusive to FASS and FASS practices and our stated affiliation with an environmental course. These first delimitation allowed us to achieve internal and catalytic validity and the second delimitation allowed for us to successfully survey most faculty, since previous to our stating this affiliation, most faculty members were not willing to participate.

The results of the survey were analyzed both quantitatively and qualitatively. Quantitatively, all answers to questions within the survey except the open-ended questions were recorded in excel and tabulated into tables. For questions that involved categories rather than numbers, each category was assigned a number and processed the same way the other questions were processed. These results were then graphed and means, modes, medians, and other measures were calculated to understand the frequency and distribution of results. Qualitative results were analyzed using the grounded a posteriori context sensitive theme method. All written answers were recorded and categorized. All raw data, has been put into tables, graphs or word documents and is available to be viewed in APPENDIX K and L.

2.3 Procedure

1. Performed literature, policy and project reviews (APPENDIX C & E).
2. Performed a systems analysis (APPENDIX B).
3. Prepared the survey and accompanying permission letters and thank-you letters. Had it reviewed and edited by Professor Tarah Wright.
4. Performed a pilot test with 4 professors from different departments within FASS in the exact format that would be used in the actual administration, as follows.
5. Combined pilot test results (APPENDIX D) and made appropriate changes to the preliminary surveying material. The changed survey and accompanying letters were sent for printing on 80 percent post consumer pages (APPENDIX G,H & I).
6. Processed Dalhousie Calendar information for population recognition and calculation and also prepared for sample selection process, ensuring no name was entered twice. If the professor listed was in s/he's "primary department" they were added to the selection bowl. If the professor was a cross over professor from another department they were either:

a) Not included if they were listed under another FASS department/school/program

b) Included if they were cross-listed from a non-FASS department (names were double-checked to confirm no duplications occurred)

A few departments were not included in the sample, because they either didn't have anyone directly indicated in the calendar, for example African Studies, or were completely staffed by University of King's College professors, for example Early Modern Studies Program.

7. Randomly selected sample of 120 people from the bowl one name at a time, and organized according to department. Names were then divided so that each group administrator had 30 research candidates. Each member had the responsibility to find the corresponding contact information for each candidate on the Dalhousie website (Dalhousie myweb, 2007).

8. Prepared email to be sent to all selected people, and after receiving some emails back requesting more information, prepared a more extensive second email asking professors to participate (APPENDIX F).

9. Arranged survey times with professors, and performed surveys at the appropriate department/school/program offices. If no response to initial email, sent out a second email; if still no response, group members went to the corresponding department/school/program office in hopes of finding any professors that had not yet responded.

10. The surveying process took, on average, about ten minutes per faculty member. In a few cases, where in-person surveys were not feasible, or by request, a few surveys were performed through email or dropped off and picked up at a later time.

11. Surveys were collected and given to one group member for processing, along with explanations and reasons for candidates that were not able to participate (APPENDIX K - Table K.6)

12. The survey process occurred over a two-week process, and all surveys were quantitatively and qualitatively combined and analyzed.

13. Results were prepared in raw data tables and graphs and provided to all group members (APPENDIX K & L)

14. Recommendations were made and summarized based on all results, including not only the survey results, but also previous literature and policy reviews.

15. A formal display poster, presentation and final report were produced for class members, Professor Tarah Wright, along with any interested faculty and administration.

3.0 RESULTS

The sample of the FASS population used consisted of 120 individuals with 61 completed surveys being collected and processed for analysis (Table 1). The results concerning the reasons why some of the sample population chose not participate were placed into two main categories (Table 1). The first category was the people who were identified as current faculty and represent 82.5 percent of the sample population and the second category of people represented 11.7 percent of the sample and could not be surveyed because they were in fact not faculty anymore or were never actual faculty. The remaining 5.8 percent of the

Table 3.1. Distribution of Faculty Sample Participation

Outcome of faculty selected for sample	Reason participated or didn't participate	Frequency
Current Faculty	-Completed the survey	61
	-Declined (didn't want to participate)	5
	-Too busy	9
	-Sabbatical or on leave (medical, maternity, out of the country, etc.)	15
	-At a conference & off campus/out of town	2
	-English not strong enough/language barrier	1
	-Cross faculty (were not comfortable completing the survey because not primary faculty association)	6
Not eligible Faculty	-No longer works here/away for several years/ Retired/not teaching/ summer part time faculty/had passed away	10
	-Actually students	4
Unable to make contact		7
Total sample size		120

sample could not be categorized because unfortunately we were unable to contact them. The sample of returned surveys collected was widely varied both in representations across department/school/programs and length of employment as faculty members at Dalhousie (APPENDIX K – Table K.7 & Fig K.1)

From the surveys collected, when asked how important environmental issues were in general to the faculty, 66 percent of faculty answered very important with the remaining 34 percent saying important (Fig. 3.1).

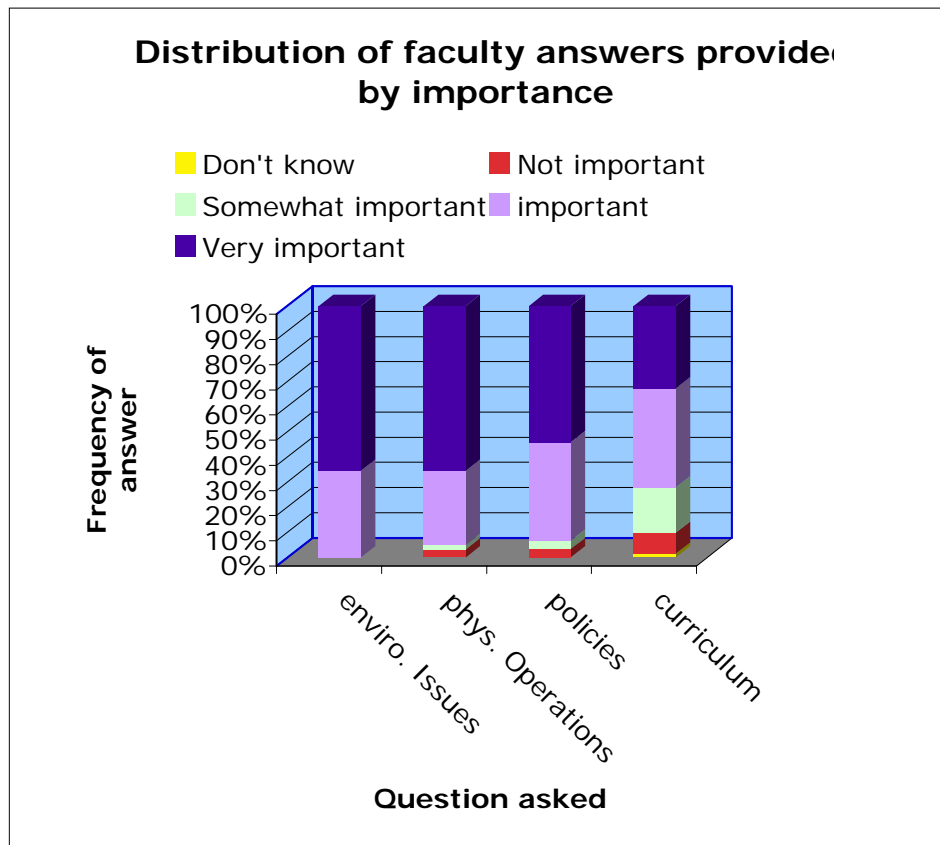


Fig. 3.1 Responses to questions about the importance of environmental issues to faculty (enviro. Issues) and the importance that Dalhousie becomes a model of environmentally friendly practices through physical operations (phys. Operations), specific policies (policies) and curriculum development (curriculum).

When asked how important it was for Dalhousie to become a model of environmental practices through physical operations, policy creation and curriculum development, faculty results suggested that the majority of people felt it was very important or important. Only two people felt that it was not important for Dalhousie to become a model of either physical operations or policy creation, while 8 percent, or 5 people, from the population felt curriculum development was not important on the environmental front (APPENDIX K – Table K.1)

Results suggest that faculty was not very familiar with current environmental management practices with 56 percent of the sample saying they were not at all familiar with the current practices and 26 percent saying somewhat familiar (Fig.3.2). Only 18 percent or 11 people felt they were familiar or very familiar with Dalhousie’s practices (APPENDIX K – Table K.1).

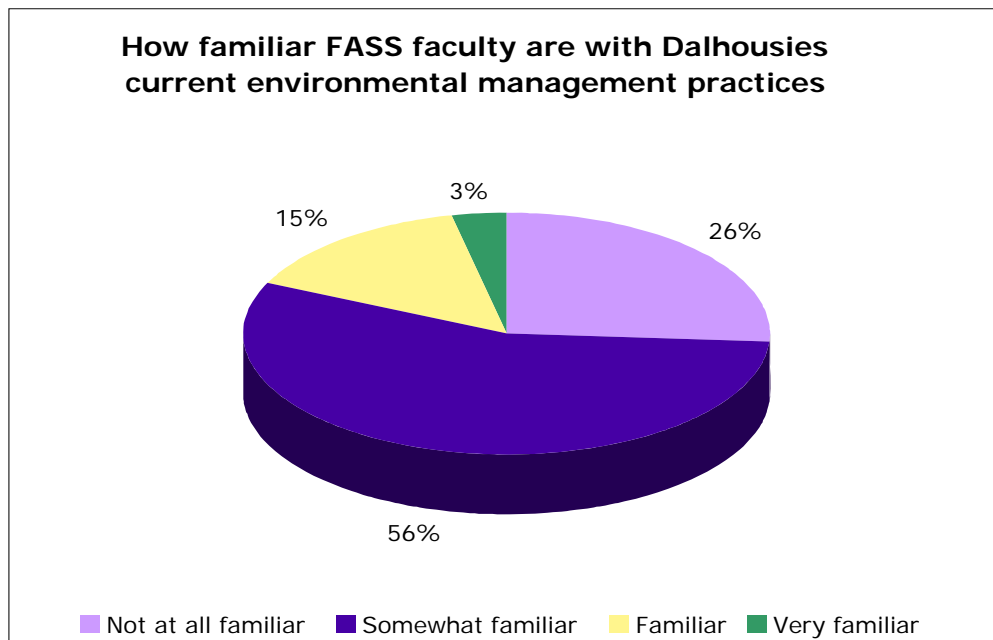


Fig. 3.2 Responses to questions measuring faculty’s awareness of Dalhousie’s environmental management practices.

When asked how satisfied faculty were with Dalhousie’s current environmental practices, the answer given most often was somewhat satisfied with 49.2 percent (Table 3.2). This answer represented both the median and the mode of this question. The remaining 50.8 percent consisted of, 8.2 percent saying not at all satisfied, 3.3 percent saying very satisfied, 26 percent saying satisfied and 13.1 percent saying they didn’t know or left the question blank.

Table 3.2. Distribution of responses to question asking how satisfied faculty are with Dalhousie University’s current management of environmental issues.

Response	Frequency	Percentage
Not at all satisfied	5	8.2
Somewhat satisfied	30	49.2
Satisfied	16	26.2
Very satisfied	2	3.3
Don’t know	5	8.2
Left Blank	3	4.9
All responses	61	100

Faculty felt energy use was the most problematic environmental issue at Dalhousie with other issues such as local and long distance transport and waste management also being widely recognized (APPENDIX K – Table K.2). Landscaping was seen as least problematic overall. When asked how personally responsible faculty members felt for Dalhousie’s current management of environmental issues, 20 faculty members felt “somewhat responsible” and 22 felt “responsible” equaling more than 68 percent of the sample population (APPENDIX K – Table K.1). Individually, a very large majority of the sample incorporate environmentally friendly practices into their daily routine including recycling cans, paper and bottles and making use of scrap paper (APPENDIX K – Table K.3). In decreasing number, some faculty accept essays with out a title

page or printed double sided, compost or use digital course readers or accept essays handed in online. Forty-four people said they were unaware of any policies that are in place for ensuring environmental responsible practices with in the FASS, with ten people suggesting they did know of some and seven people left the answer blank or didn't know (APPENDIX K – Table K.3).

The majority of faculty felt the FASS is somewhat, if not completely, obligated to incorporate environmental education into their curriculum (APPENDIX K – Table K.3). The median and mode of the sample felt the FASS was obligated, while 7 people felt it was not at all obligated, 16 people felt it was somewhat obligated and 14 people felt it was very obligated (APPENDIX K – Table K.3). A large percentage of the faculty sample suggested they would

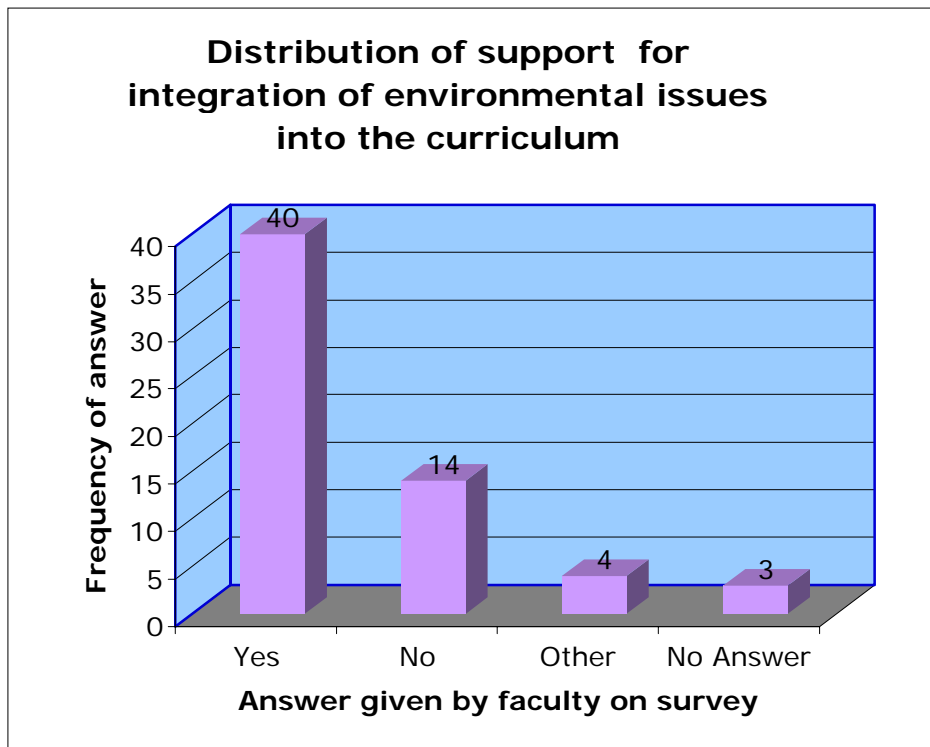


Fig. 3.3 Responses to question asking if faculty would support the integration of environmental issues into the curriculum.

support the integration of environmental issues into the curriculum with 66 percent saying yes and 23 percent saying no. The remaining 11 percent either didn't know or left the question blank. A much more varied response was given when asked how faculty felt environmental issues should be integrated into the curriculum. The largest group of people suggested integration into current courses would be the best method (Fig.3.4). Only two people felt that a mandatory environmental course would be appropriate while nineteen people made other suggestions such as increasing the number of elective classes or requiring both the integration of material into current courses and also a mandatory course.

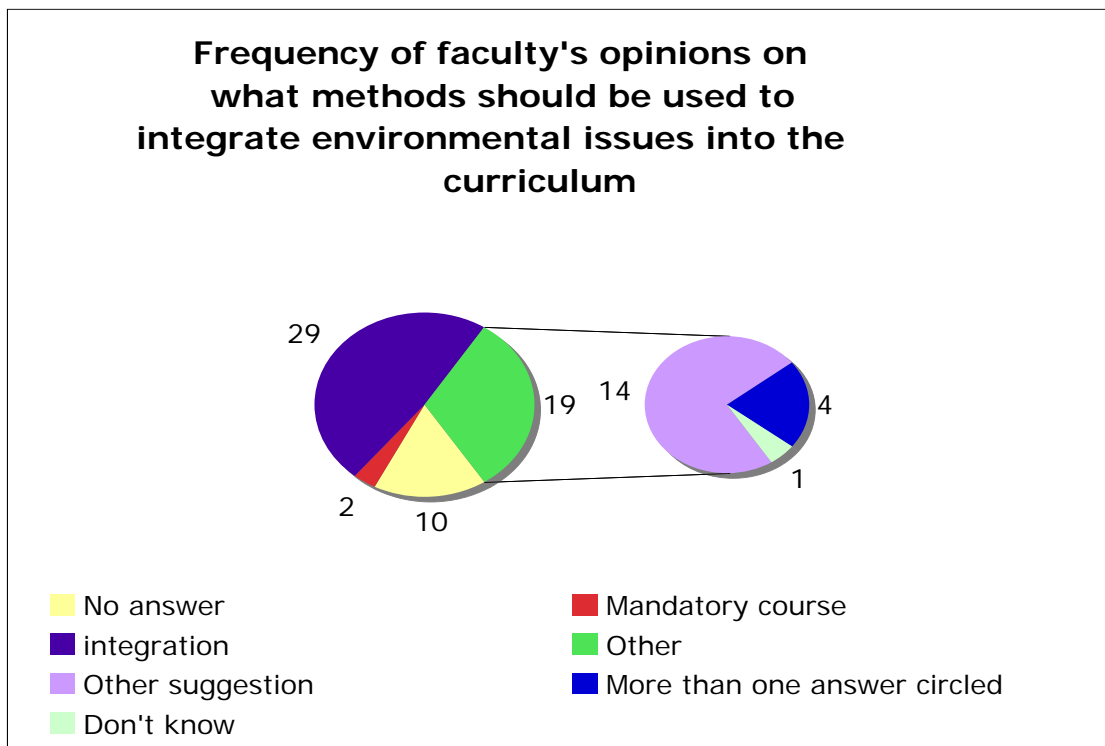


Fig. 3.4 Responses to questions about possible methods for the integration of environmental issues into curriculum.

Qualitative results from the final survey question asking for faculty to list any key initiatives that the FASS could engage in to create a more

environmentally friendly campus resulted in 4 main over all categories of suggestions (APPENDIX L). The first involves increasing communication and holding workshops, the second involves the formation of a committee to review environmental issues and suggest changes within the FASS, the third to increase effectiveness of current practices and policies while standardizing curriculum, and the fourth to implement programs to encourage reduction in consumption patterns to prevent overuse (APPENDIX L).

4.0 DISCUSSION & RECOMMENDATIONS

The overarching purpose of our study was to identify and understand environmental attitudes and behaviours within the FASS, while also making recommendations as to how they could be improved. To address this we sought to discover the degree of congruence between signed policies and the current environmental practices within the FASS. This discussion section will combine the results from our literature reviews and surveys, wherein we will discuss the policies Dalhousie has signed that are specifically relevant to the FASS and the respondents' knowledge of these policies. In addition, this section will look at the qualitative data to discuss how the suggestions that the respondents put forth may be achieved.

We were able to obtain an understanding of Dalhousie's environmental commitments and responsibilities by reviewing the environmental policies that the Dalhousie Senate currently prescribes to. Of particular interest were the actions and standards within the policies that were faculty specific in regards to environmental management, education and practices at Dalhousie University.

This is relevant because according to our survey results, these standards and/or actions are not presently being carried out by the Faculty of Arts and Social Sciences (APPENDIX K). We believe these policies are not being followed because they are inherently ambiguous, they fail to delegate responsibilities, and the voluntary nature of the declarations makes them difficult to enforce. The most pressing problem, however, is that faculty are simply unaware that such policies exist, which in turn prevents them from understanding and adopting the actions put forth in the policies.

In the Environmental Policy for Dalhousie University, adopted November 9, 1990, there is ambiguity regarding how the standards are to be carried out and who is responsible for implementing and enforcing them. Standard one explains that it is Dalhousie's responsibility to offer academic choices that will ensure that the entire Dalhousie community will have opportunities to become "well versed concerning environmental issues and solutions" ("Environmental Policy", 1990). Currently, there is little evidence that Faculty of Arts and Social Sciences feel responsible in offering academic choices that will help ensure the community becomes well versed in environmental issues. This was deduced from question nine subset a, which asks if they [faculty members] would consider the integration of environmental issues into the curriculum. Results showed that forty out of the sixty-one participants responded that they *would*; but none of those participants actually said they presently have it in their curriculum. Standard six says that it is the expectation of all persons and units affiliated with Dalhousie University to strive towards the attainment of this policy's environmental

objectives (ibid); yet, how can this be achieved if 72% of respondents answered “no” to question seven of our survey which asked “Are you aware of any policies that are currently in place for ensuring environmentally responsible practices in FASS?” (APPENDIX K).

The Halifax Declaration, created at Dalhousie University on December 11th, 1991, has six actions that are less generalized than the Environmental Policy for Dalhousie University, yet each action is still rather sweeping and indiscriminate. Action two states that it is Dalhousie’s responsibility to “utilize the intellectual resources of the university to encourage a better understanding on the part of society and the inter-related physical, biological, and social dangers facing the planet Earth” (“ The Halifax Declaration”, 1991). A very relevant and prominent intellectual source would be the university’s faculty members. In such, faculty members should be responsible for educating their students on how to become better environmental citizens. The best way to teach this is through leading by example, such as by conducting their class in an environmentally sound fashion, by accepting papers printed on recycled material and posting readings online, for instance. However, according to our survey, it appears that members of the Faculty of Arts and Social Sciences do not feel that this is their responsibility outside of their own personal choice to teach their students about environmental issues. This was revealed when the majority of respondents left question six blank, wherein it asked, “What types of environmental practices does your department/program/school currently follow?”, along with a list of several specific practices including paper recycling, online reading, etc

suggesting that no policies or general standard practices have been created (APPENDIX K- Table 3). Although we did not include an extra column to indicate that they “don’t know,” it can be reasonably deduced that this was the case; thus, demonstrating a lack of awareness and effort being made toward such ends.

Standard four of The Halifax Declaration states that it is Dalhousie’s responsibility “to enhance the capacity of the university to teach and practice sustainable development principles, to increase environmental literacy, and to enhance the understanding of environmental ethics among faculty, students and the public at large” (“The Halifax Declaration”, 1991). Focusing on the Faculty of Arts and Social Sciences at Dalhousie University, the university’s responsibility to increase environmental literacy among faculty, students, and the public at large does not appear to be carried out to its full extent. We identified this fact by reviewing how respondents answers to question nine subset *b*: “If environmental issues were integrated into the curriculum of your department/ program/school, which of the following methods would you prefer?” (Fig. 3.4); wherein the majority of respondents answered that they would prefer to integrate environmental studies education into course curriculum. Although such integration does not exist now, the willingness of the faculty shows that they are interested in making the effort to become more committed to environmentally sound practices.

In the Talloires Declaration, adopted Feb 8th, 1999, there is more clarity within the standards regarding who is responsible for what within the Dalhousie community. Action five reads that the university is required to, “set an example of environmental responsibility by establishing institutional ecology policies and

practices of resource conservation, recycling, waste reduction, and environmentally sound operations ” (“Talloires Declaration”, 1999). Since faculty members have a direct influence on students, it follows that they should conduct their courses in an environmentally responsible way that would encourage their students to make environmentally responsible decisions as they learn by example. However, there is still no indication of this action being required among the Faculty of Arts and Social Sciences aside from the faculty member’s own personal interest in carrying out this action. There is evidence to support this in the responses gathered for question four, which pertains to personal daily routines of the faculty (APPENDIX K – Table K.3). Action seven states that the university is to, “convene university faculty and administrators with environmental practitioners to develop curricula, research initiatives, operation systems, and outreach activities to support an environmentally sustainable future” (“Talloires Declaration”, 1999). Our qualitative data revealed that although this action is not in place now, there is substantial support by the faculty for the creation of a committee to oversee environmental initiatives within the FASS (APPENDIX L). One of the main difficulties in enforcing policies like the aforementioned, is that they were created on a voluntary basis. The lack of enforcement is hindering the ability of policy enforcement along with the general lack of awareness about the policies among faculty; which was revealed in the results from question seven (APPENDIX K – Table K.3). We believe that the faculty’s aforementioned readiness to integrate environmental issues into their curriculums is a significant discovery, and can aid in the path towards improving environmental trends within

the FASS. The implications surrounding the faculty's lack of knowledge, combined with the inherently ineffective policies, highlights the importance of exploring solutions to help close the awareness gap and create more effective policies.

Specific recommendations by faculty included, increasing communication and forming a committee to review environmental practices and suggest changes(APPENDIX L). It was recommended by faculty that improvements with regards to the effectiveness of current policies be made, while standardizing curriculum expectations (APPENDIX L). We believe that these recommendations can be achieved in three stages; short, medium, and long term. The first and easiest step would be to create an Internet link that would include the current environmental policies and declarations through Dalhousie's home page instead of simply having them on the Dalhousie Senate webpage, thus making it more readily known and available for all members of the Dalhousie community. This would serve to help close the awareness gap that exists, as well as encourage a more open and participatory FASS community. Also, a short term goal could be made to create awareness regarding the energy consumption in the Faculty of Arts and Social Sciences, such as by posting signs near light switches, that highlight their energy use, to help encourage conservation by switching them off. Similar initiatives surrounding other consumption issues could also be employed.

In the medium term interval the creation of a Sustainability Committee should be initiated. We believe Dalhousie has a responsibility to its students, faculty and surrounding community to encourage an ethic of environmental

consciousness. An expectation needs to be established wherein minimal degradation of the environment becomes habitual instead of being seen as a sacrifice. As Leslie Barcza, an Environmental Protection Advisory Committee (EPAC) representative at the University of Toronto (UofT) stated “Sustainability can only be obtained when there's leadership and commitment at every level” (Leslie Barcza interview via email March 1st 2007).

With this in mind we suggest that Dalhousie create DEPAC (Dalhousie Environmental Protection Advisory Committee) for the FASS. This committee should strive to create a cohesive committee incorporating students, faculty, and facilities management as UofT has done. The EPAC at UofT consists of administrative staff, academic staff and student groups, and is chaired by a member of the University's academic staff (ibid). The Committee will provide advice to the Assistant Vice-President, and Operations and Services regarding what actions need to be carried out in order to meet the environmental protection policies in place. Participation, transparency, and communication, are of utmost importance in this initiative as such informed and involved students will be one of the primary objectives of the committee.

One of the main purposes of the DEPAC would be to ensure that the FASS is adhering to current environmental commitments, as well as to exert pressure on higher levels of administration to make a comprehensive policy that can be more effectively implemented and enforced. The creation of this committee can be achieved by examining the successes and failures of other sustainability committees on campus, such as the Life Sciences Centre's Green

Sustainability Committee, and by involving other green initiatives such as Dalhousie Integrated Sustainability Initiative (DISI) to help in the creation of such a committee (“Facilities and Services at the University of Toronto”).

In the long term, we suggest that mandatory workshops be organized for current and incoming faculty with the goal of examining ways to ‘green’ their courses. To accompany this, an incentive program for the encouragement of faculty to follow through on commitments and training was suggested. The true importance of having an incentive program for faculty was highlighted in the UPEI eco-audit conducted in 2005 (Beringer et al., 2006).

It is hoped that through the derived faculty commitment, this initiative will help educate students to become environmentally functional and literate. Another suggestion is to create a sustainability policy that would inspire leadership and commitment by all faculty, staff and students who participate in FASS operations, thus ensuring that behaviours are governed by an ethic of environmental consciousness.

Finally, we suggest the creation of a mandatory course for all freshmen, which would serve to provide students with the tools needed to be environmentally responsible citizens. This idea was brought to our attention in reviewing Sophie Mazowita’s Greening the Campus report done in 2005. In this report Mazowita highlights the importance of shifting away from the “compartmentalization of knowledge” (page 4) which is hindering a holistic way of thinking that is necessary in attaining an ethic of environmental consciousness. She also stressed the importance of striving to allow

environmental education to be “experiential and collaborative” (Mazowita, 2005. p. 1). To this end, we also suggest that students who complete this first year course and who also make contributions to the committee and/or gains in a Greening the Campus project will receive a “Green Certificate” at graduation, as was introduced at Princeton University (Mount Allison University, 1998. p. 82).

5.0 CONCLUSION

We believe the findings from this project provide a firm foundation for further research. We experienced a number of successes and challenges through the course of this study, which is discussed in the following section in an effort to provide recommendations for future researchers.

We achieved satisfactory results through the content and subsequent administration of our survey. Our biggest challenge was the temporal constraint through the length of the project period. Had time permitted, we may have conducted a second pilot test and would have been able to conduct more face-to-face surveys. With regards to the administration of the survey, our greatest challenge was meeting faculty face-to-face, as their actual students had priority over us in use of their time. The time that was available was often limited to their office hours, and our time was limited to our own academic schedules. Some suggestions for the administration of the survey include, conducting surveys more consistently, such as administering the surveys either all in person or all by email. In addition, a comprehensive electronic list of the faculty, both those who were available and those who were unavailable, should have been kept. A

preemptive list of office numbers and office hours would have also been helpful in our face-to-face administration of the surveys. We would also have included a more detailed initial email to the faculty members to describe who we were and our intentions through the survey. However, in rewriting our email to faculty, we were forced to allow bias to enter the process because we had to identify the class we were taking for this research project, and why it was being completed (APPENDIX F). Finally, a list of possible questions that faculty may ask with regards to the survey would have also been helpful in our preparation for our face-to-face administration of the survey. Ultimately, having an idea of possible problems or issues that may arise during a face-to-face administration would have allowed for a more consistent and reliable answer from each of the administrators.

With regards to the survey itself our definition of ‘practices’ could have been defined more clearly. Specifically, we were interested in the personal practices of the faculty in terms of how they manage their classes with respect to the environment. This differs from what environmental practices they carry out throughout their workday at Dalhousie, as well as the personal practices they exercised at home. Also, our questions could have been more Faculty of Arts and Social Sciences specific, in order to reduce some question related ambiguity—especially with respect to question six (APPENDIX H). Likewise, there should have been an extra column added to our Likert chart, entitled “don’t know” (Palys, 2003), as there were many faculty members who wrote “I don’t know” directly on the survey in the margin. Furthermore, in our ‘yes’ or ‘no’

questions, we should have chose to use a multiple-response item question (Palys, 2003), so as to reach a more concise understanding of how often faculty members carry out such practices as recycling, scrap paper use, etcetera (APPENDIX H).

Finally, a student survey would have been another extremely helpful research tool. The objective of the student survey would be to gain a better understanding regarding the possibility of implementing a mandatory environmental studies course across all disciplines. It would have added to the assessment surrounding the integration on environmental education throughout all curriculums, either by actually teaching environmental studies in the classroom, or by faculty members demonstrating environmental responsibility in the way they manage their courses. Ultimately, it could have been identified as another viable rationale for actually implementing a mandatory environmental course (Question/discussion period from our presentation, March 27, 2007).

Overall, future research will prove useful in contributing towards the amelioration of current environmentally unsustainable FASS trends. In the interim, we believe our short and medium term recommendations should and can be initiated without delay to start the process of raising awareness, realizing responsibility and creating sustainable change.

6.0 WORK CITED

- "An Environmental Policy for Dalhousie University." *The Senate of Dalhousie University*. <http://senate.dal.ca/Policies%20and%20Forms/Policies.php>
Retrieved: February 27th, 2007.
- Barcza, Leslie (representative at the University of Toronto for Environmental Protection Advisory Committee (EPAC)) email interview conducted by Alyssa Forman on March 1st 2007.
- Beringer, A. et al. (2006, July). *Sustainability in higher education in Atlantic Canada: a performance assessments and regional peers comparison*. Retrieved March 8, 2007 from, http://www.upei.ca/environment/Atl_Can_SHE_study.pdf
- Cook, P. (2005, May). *The History of WATgreen: It's Founders and It's Evolution*. Retrieved March 8, 2007 from, <http://www.adm.uwaterloo.ca/infowast/watgreen/history.html>
- Creative Research Centers. (2003). "Sample Size Calculator." Retrieved February 11th, 2007. <http://www.surveysystem.com/sscalc.htm>
- "Dalhousie Calendar 2006/2007." (2006, February). *Dalhousie University*. Halifax: Office of the Registrars.
- Dalhousie myweb. (2007). Retrieved: February 11th- 16th, 2007. https://my1.dal.ca/uPortal/tag.9b273febd69b3fe9.render.userLayoutRootNode.uP?uP_sparam=focusedTabID&focusedTabID=179&uP_sparam=mode&mode=view
- Facilities and Services at the University of Toronto. "Policies". Retrieved: February 27th, 2007. <http://www.fs.utoronto.ca/policies/environment.htm>
- "International Declaration of Cleaner Production." *United Nations Environmental Program*. "United Nations Environment Programme Environment for Development" <<http://www.unep.fr/pc/cp/declaration/translations/english.htm>> (official website) <<http://www.unep.fr/pc/cp/declaration/home.htm>> (document) Date Accessed: February 27th, 2007.
- Mazowita, S. (2005, September). *Greening the Campus: Report from the 6th Ball State University Conference*. Retrieved March 8, 2007, from, <http://www.mcgill.ca/files/rethink/S.MazowitaBSUGOCReport2005.pdf>
- Mount Allison. "Environmental Audit 1998". 1998. Retrieved: February 27th, 2007. <http://www.mta.ca/clubs/audit/audit13.pdf>
- Palys, Ted. (2003). *Research Decisions: Quantitative and Qualitative Perspectives*. 3rd Edition. Scarborough: Nelson, a division of Thomson Canada Limited.
- Talloires Declaration. "ULSF, Association of University Leaders for a Sustainable Future." <http://www.ulsf.org/programs_talloires.html> (official website) <<http://www.iisd.org/educate/declarat/talloire.htm>> (document). Date Accessed: February 27th, 2007.
- The Halifax Declaration. "The Halifax Declaration." <<http://www.iisd.org/educate/declarat/halifax.htm>> Date Accessed: February 27th, 2007.
- Wright, Tarah. (2006) ENVS 3501: *Systems analysis*. Class Presentation. Halifax: Dalhousie University.
- Wright, Tarah. (2007). *ENVS 3502: The Campus as a Living Laboratory*. Class Presentation. Halifax: Dalhousie University.

APPENDIX A –The Dalhousie Tree of Authority

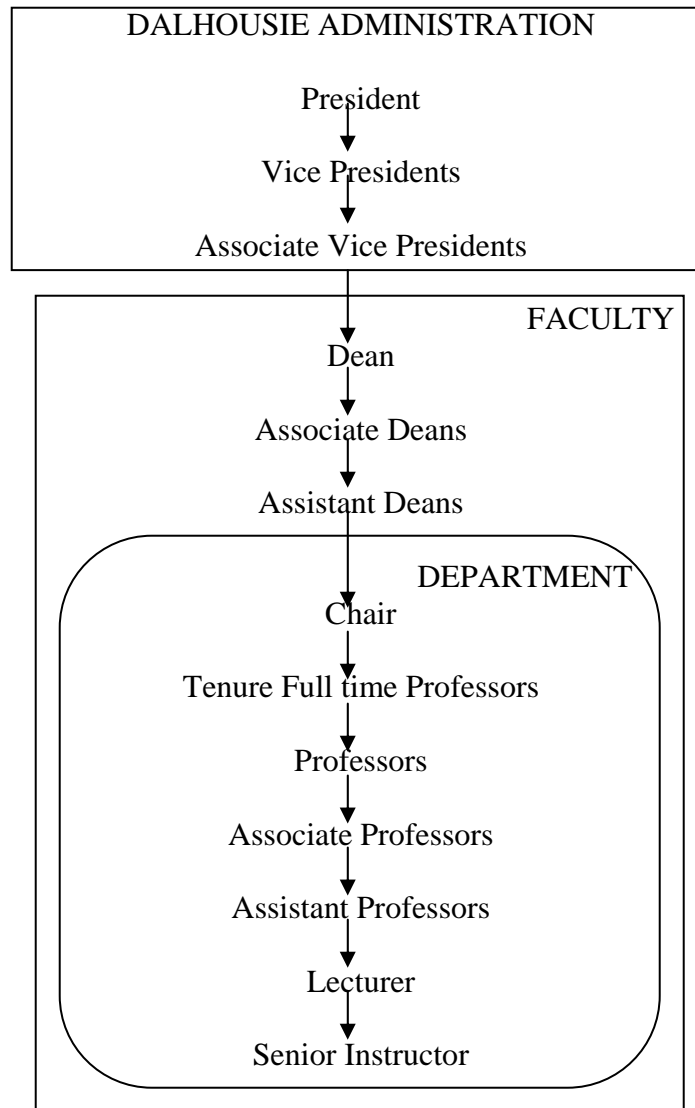


Figure 1 - The Dalhousie Tree of Authority

As one moves down the tree, authority within the Dalhousie community decreases. All positions found within a box are classified as part of that general category. Administrators may also be considered as faculty, if they are listed within the Dalhousie Course Calendar 2006/2007 under a specific

APPENDIX B- Systems Analysis

To understand how a system works, one must first identify the actors or stakeholders involved, and how they interact with one another and their ecological community (Fig. 1.1) In this case, the Dalhousie University community is where this system primarily occurs. This research focused specifically on the main actors that influence and/or are influenced by the FASS. All actors, defined as individuals or groups that are affected by the outcomes that develop from an issue, can be separated into three categories (Wright, 2006).

The first category of actors, who are continuously involved in the system at hand, are called core actors. The core actors in this research are Faculty and student groups. Faculty are core actors because they are the crucial component of the Dalhousie community that is the main focus of our research. Furthermore, faculty play an integral role in how the university affects the environment, not only through daily activities, but also through policy and curriculum expectations; which have a far reaching affect on students, other staff and the administration. Faculty can be subdivided further into different categories reflecting the varying levels of authority within the schools academic positions (APPENDIX A). Gaining an understanding of the FASS's opinions and practices allowed suitable recommendations for positive changes to be developed and explored. By recognizing how the FASS views environmental management across campus and within their faculty, we were able to subsequently recognize whether this exploratory research should be expanded to involve more faculties, and more intensive environmentally sustainable changes. The second group of our

recognized core actors, were the variety of environmental student groups on campus that are continuously trying to increase awareness and minimize Dalhousie's ecological footprint.

The actors that tend to be less involved, but can have a substantial affect, are called supporting actors. Supporting actors include the administration, Dalhousie student body, assistant and custodial staff, the Halifax Regional Municipality, textbook producers & other supply companies, and the general population. All of these groups, while not continually involved in the FASS's daily practices and opinions, exert tremendous influence on how faculty perform their job and the decisions they make. However, it is also important to recognize that faculty can also directly or indirectly affect these actors' decisions and beliefs.

Lastly, the actors that are affected by decisions made by other actor groups, but who do not get involved in the decision making are classified as "should be" actors. In this project the "should be" actors include the environment and the many international agreements involving environmental decision making and practices that Dalhousie has signed. The environment is classified as a "should be" actor because it should be involved in daily decision making; but, is not. The reason the agreements were classified within this actor group, is because while they can have a major role in explaining standards and influencing other actors on their own, these documents are often not fully fulfilled and useless without other actor groups.

Actors can view the issue of proper environmental management as symptomatic, proximate or fundamental. Systematically, this problem would

be seen strictly as symptoms, such as over consumption of paper or improper waste management. To address the problem, one who is thinking systematically would try to fix only the symptoms, such as starting to print on paper in a double sided manner or putting more recycling bins in the hall ways. Proximately, actors would be recognizing the causes of observed symptoms, such as lack of online reliable resources or insufficient training on green alternatives. Understandably, addressing these problems would mean not only looking at the symptoms, but also encouraging solutions to the different causes, such as offering a quick “how to” guide on how to set up and use online resources. Ultimately, fundamental thinkers would recognize the underlying worldviews and opinions that create the problems surrounding environmental mismanagement. Solutions to such problems would include adding curriculum to all subjects that encourages the student to make connections between their area of research, their lives, and the role the environment plays in both. The goal of this exploratory research was to gain a better understanding of faculty viewpoints on all of these levels, and to suggest possible positive changes that can be implemented over time. It is hoped that this will result in outcomes at the systematic, proximate, and, most importantly, fundamental levels.

APPENDIX C – Project Analysis

A major component of our literature review focused on the analysis and critique of previous greening the campus projects. These projects originated from two sources; the University of Waterloo WATgreen Library (2007), and Environmental Problem Solving II 3502 project web site at Dalhousie University (2007). Through this process, we were able to select projects that shared similar themes or methods with our own, and use them as a platform from which to create our own study. This involved the identification of failures and successes so as to learn from the experiences of previous groups, thus making responsible connections with other research, which constitutes an essential part of scientific research (Palys, 2003).

The most basic characteristic of all the projects reviewed came from their use of both quantitative and qualitative research methods. These two styles often lie in contrast to one another, but are believed to be far more useful in combination for most interaction based research methods (Palys, 2003). Our own study strove to achieve the same balance, but in the end we relied more heavily on quantitative Lickert-type scales for ease of analysis and the limited time frame under which we operated. Our questions, however, were structured in a way that forced the participants to consider their attitudes, behaviors and perceptions, allowing for an integration of qualitative features into a quantitative method (Palys, 2003). Another fundamental similarity was the pursuit of exploratory research where the researchers wanted to gain new insights into the causes and symptoms of their research topic (Palys, 2003). Complimentary to these foundational characteristics, we also selected projects that employed a self-

administered survey as a main component of their research. Since we were focusing on the same approach, this review allowed for the identification of best practices. We were able to improve the esthetic value of our survey after observing a poorly organized survey that lacked flow and organization. It had the most basic, personal information questions at the end, and the main questions were in no particular order (Sampson et al. 2005). This is unfortunate, as basic introductory questions should be first, and a survey should flow like a conversation (Palys, 2003). In such, we worked these aspects into the construction of our own survey in the hopes of making it appealing and elegant for our participants. In combination with our pilot testing, this goal was achieved as we delivered a very concise, practical survey. To coincide with the survey, it was also essential to select a proper population for our sample. Within the groups being reviewed, two out of four used non-probabilistic approaches, with the other two using probabilistic. This was fortunate for us to get an idea of what type of sampling method would best suit our purposes. One group had narrowed their population down to those people present at the Killam Library on the Dalhousie University campus on a given day, as this was most convenient. Thus they worked with a haphazard method and obtained surveys from whoever was willing to participate at the time (Adams et al. 2004). Unfortunately, their project aimed to include students, faculty and staff, but because the library is often occupied mainly by students, their results were significantly skewed. In another case, the group used their own classes as sample populations, but instituted no safeguards to protect against multiple samples of the same person, and the

prevention of bias by association (Baccardax et al. 2005). As we had a specific group in mind, members of the Faculty of Arts and Social Science at Dalhousie University, it was important to avoid the aforementioned approaches in favour of probabilistic, random sampling approach. This would in turn help to minimize the sampling errors that they had encountered during their research (Palys, 2003). Having completed these in depth critiques of previous work, we were also able to examine the way in which their research and findings were presented in the final report. As this is a major component of any project, upon the creation of this paper, we could reflect on those that we had read, to again improve and incorporate some facets of our own. We could identify what made them interesting or not, and how we could frame the research in order to provide the fruits of our labour in a way that satisfied the reader (Palys, 2003).

The inclusion of these previously completed research project proved to be an invaluable source of information for the creation of our own study. We had the opportunity to observe mistakes that occurred within methods similar to our own, and some examples of what works best for a particular situation. This legacy of scientific process has made a significant contribution to our own success, as well as those that may review ours in the future.

APPENDIX D - Pilot Test Result Overview

The main research tool being used in our study was a self-administered survey, which was delivered in person and collected immediately upon completion in most cases. We performed an extensive design process during its construction that included several review and drafting sessions, followed by further editing through Prof. Tarah Wright, and finally a pilot test within our target population. Although the editing and reviews provided extensive feedback for its basic design, it was not until the pilot test that we were able to gain true insight into how the survey would be received and interpreted. This step is critical to the success of any interactive research method, as it will highlight problems we may not have recognized during the development process (Palys, 2003).

Each member of our research team completed their own pilot test, which involved contacting a faculty member within FASS to set up a time and location for its administration. Having done so, we were able to compare our findings and feedback to improve the construction and delivery of our survey. We experienced a variety of responses to the pilot test, ranging from general disinterest, to an in depth critique of the questions technical and structural aspects. This was a welcome surprise as it allowed a brief window on what we could expect when approaching the entire sample population. With regards to the specific input, all participants found the survey to be useful and worthwhile for its purpose of information gathering on attitudes and behaviors. There were a few instances of ambiguity surrounding our use of certain labels and statements, which we then clarified to ensure that our participants understood what we were trying to communicate (Palys, 2003). A major example concerned an explanation of what

our references to policy meant surrounding practice and development. Policy was also asked about in several places, and needed to be consolidated into one concise question. We also had to distinguish between faculty and department so as to prevent anyone from mistaking their input as a representation of the behaviors for their entire department. Furthermore, the use of “transportation” in question three was expanded to include local and long-distance travel as a serious concern was raised over their difference and impact on the environment (APPENDIX H). Esthetically and structurally, we also made several dramatic changes stemming from the response we received. This included the elimination of instructions for each Likert-type question (Palys, 2003), as they were repetitive and unnecessary when the scaling remained consistent between questions. We also removed any bolding in order to prevent the creation of bias by drawing unwarranted attention to specific terms. We then removed questions that seemed to provide meaningless responses in the context of our research to provide a more succinct presentation (Palys, 2003).

Having essentially performed a complete overhaul of the survey after the pilot test, we felt that the research tool was ready to be used in its formal application. We went to great lengths to ensure it was clear, concise and above all, brief. All pilot test participants expressed the essential need to be short and to the point, making the survey as “painless” as possible. This would then translate into a higher completion rate and our ability to gain an array of responses in an extremely short period of time, thus we created a survey that could be introduced, completed and collected in under ten minutes.

APPENDIX E - Literature/Policy Review

The following is a review and summary of the four environmental policies allocated to Dalhousie University's environmental management and practices. In this review, the standards that we focused on were the standards that are related directly to Dalhousie faculty members and their position in regards to environmental management and practices at Dalhousie University. The other standards were not particularly focused on in depth for they did not show a direct relation to faculty member's environmental role at Dalhousie University, but instead pertained to other levels of environmental management and concern at Dalhousie University, such as: the management of buildings and grounds, health, technology, external relationships, and community involvement.

Policy: An Environmental Policy for Dalhousie University (adopted November 9, 1990)

The opening statement is clear, understandable, and, more importantly, it is environmentally appropriate in that it says that Dalhousie University recognizes that it has a significant impact on the environment, and that it is its responsibility to either eliminate or mitigate these environmental impacts ("An Environmental Policy for Dalhousie University", 1990). The six standards that are the 'cornerstone' of the opening statement, are environmentally appropriate, yet are inexcusably generalized and brief. The three standards that are of most concern with respect to our project are standards one, two and six. Standards three, four and five concern Dalhousie's environmental management of buildings and

grounds, the achievement of an environment that is acceptable in terms of health, and the achievement of environmentally sound corporate operations as allowed by technology, economics and common sense—none of which are directly faculty specific (ibid). Standard one is faculty specific as it explains that it is Dalhousie's responsibility to offer academic choices that will ensure the entire Dalhousie community will have opportunities to become "well versed concerning environmental issues and solutions" (ibid). Standard two is faculty specific as it states that not only are Dalhousie activities to be conducted in ways that are environmentally appropriate, but that it also states that Dalhousie will encourage *faculty* and *associates* to conduct research that investigates the causes and mitigation of environmental degradation, as well as social, economic, and industrial pathways towards sustainable development (ibid). Lastly, standard six is faculty specific as it says that is the expectation of all persons and units affiliated with Dalhousie University to strive towards the attainment of these environmental objectives (ibid).

Policy: The Halifax Declaration 1991 (Done at Dalhousie University, Halifax, Canada, the 11th day of December, 1991)

According to The Halifax Declaration Dalhousie University's role and responsibility, as a university, is "to help societies shape their present and future development policies and actions into the sustainable and equitable forms necessary for an environmentally secure and civilized world" ("The Halifax Declaration", 1991). This policy is a result of a meeting between presidents of

universities from Brazil, Canada, Indonesia, Zimbabwe and elsewhere as well as by the senior representatives of the International Association of Universities, the United Nations University, and Association of Universities and Colleges of Canada. At this meeting they agreed that “because the educational, research and public service roles of universities enable them to be competent, effective contributors to the major attitudinal and policy changes of necessary for a sustainable future, the Halifax meeting invited the dedication of all universities” to six actions (ibid). Two actions that are of concern to our research are actions two and four. Actions one, three, five, and six pertain to Dalhousie’s commitment in promoting sustainable development within the university, local, national and global levels, their responsibility in emphasizing the ethical obligation of the present generation in regards to human disparity and environmental unsustainability, and their role in cooperating with other societies in the pursuit of policy formation and maintenance. Action two is faculty specific as it states that it is Dalhousie’s responsibility to “utilize the intellectual resources of the university to encourage a better understanding on the part of society and the inter-related physical, biological, and social dangers facing the planet Earth” (ibid). Standard four is also faculty specific as it states that it is Dalhousie’s responsibility “to enhance the capacity of the university to teach and practice sustainable development principles, to increase environmental literacy, and to enhance the understanding of environmental ethics among faculty, students and the public at large” (ibid).

Policy: International Declaration of Cleaner Production (United Nations Environmental Program) (dated adopted unknown)

This policy sets a series of standards that Dalhousie, along with other universities, organizations and companies, must follow, these include: *leadership*, using our influence; *awareness, education and training*, building capacity; *integration*, encouraging the integration of preventive strategies; *research and development*, creating innovative solutions; *communication*, sharing experience; and, *implementation*, taking action to adopt cleaner production. The areas of concern with respect to our research include: *awareness, education and training*, and *integration*. The other six standards are not faculty specific in that they pertain to: relationships with stakeholders; promoting a shift from end-of-pipe to preventive strategies; supporting the development of environmental efficient products and services; informing external stakeholders about benefits; setting goals and reporting progress; encouraging new and additional finance and investment in preventive technology options, promoting environmentally sound technology between countries; and reviewing the success of this declaration (“National Declaration of Cleaner...”). Under *awareness, education and training* there are two objectives that are faculty specific: “developing and conducting awareness, education and training programs within our organization, [and] by encouraging the inclusion of concepts and principles into educational curricula at all levels” (ibid). Similarly, the standard about *integration* has three objectives to encourage the integration of preventive strategies, and the first objective raises concern: “encouraging the

integration of preventive strategies into all levels of our organization” therefore, assumedly including the faculty level as well (ibid).

Policy: Talloires Declaration (adopted Feb 8th, 1999)

According to the Talloires Declaration, all “universities have a major role in the education, research, policy formation, and information exchange necessary to make [the goals of mitigating and eliminating environmental issues] possible. Thus, university leaders must initiate and support mobilization of internal and external resources so that their institutions respond to this urgent challenge” (“Talloires Declaration”). There are ten actions that are then listed that the university must follow. Actions one, three, four, five, and seven are all problematic in relation to our findings. Actions two, six, eight, nine and ten pertain to: encouraging other universities a sustainable future; encouraging the involvement of government and non-government organizations in research, education, policy formation, and information exchange in sustainable development; establishing partnerships; working with national and international organizations; and establishing a committee in carrying out this declaration (ibid). Action one pertains to faculty members as it states that the university must “use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmental future” (ibid). Action three also pertains to faculty as it states that the university must, “establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields

to ensure that all university graduates are environmentally literate, and have the awareness and understanding to be ecologically responsible citizens” (ibid). Similarly, action four is faculty related as it reads that the university must, “create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional students” (ibid). Action five is also faculty specific as it reads that the university is required to, “set and example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations” (ibid). Lastly, action seven is faculty specific as it states that the university is to “convene university faculty and administrators with environmental practitioners to develop curricula, research initiatives, operation systems, and outreach activities to support an environmentally sustainable future” (ibid).

APPENDIX F – Initial Email to Selected Sample Faculty & Revised Email

Initial Email:

Good evening Professor XXXX,

We are a group of 4 undergraduate students administering a survey as part of a research project for an upper-level undergraduate problem-solving course. We would like to conduct the survey with you at a time and location that is convenient. Do you have office hours or a 10 minute period any time between and including Monday, March 5 and Tuesday, March 13 that you would be available to take our survey?

All information collected will be kept confidential.

Thank you,

(Signed group member who sent it)

Revised email:

Good Morning Professor XXXX,

We are a group of four undergraduate students administering a survey as part of a research project for an upper-level undergraduate problem-solving course, ENVS 3502. The questions surround environmental practices at Dalhousie and more specifically, FASS. It is for exploratory research, and results will be calculated and used to better understand the Faculty's feelings and opinions surrounding these practices. Based on the results, we will be providing an overview and possible suggestions for improvements in a report, which will be given to the Dean's office and to our Professor, Dr. Tarah Wright. Overall results will also be presented in our class and be available upon request.

You have been selected at random from the FASS faculty listed in the 2006/2007 Dalhousie Calendar. The survey is a page and a half in length, double sided, and should take about 10 minutes to complete. All information given on the survey will be kept confidential, and raw results will only be viewed by the four students involved.

We will be conducting the survey between Monday, March 5th, and Tuesday, March 13th. Do you have office hours or any ten minute period within these dates that could accommodate its administration? If so, please provide a time and location that is most convenient.

Thank you for your time and consideration,

(Signed group member who sent it)

APPENDIX G – Pre Survey Participation Letter

Faculty of Arts and Social Sciences

Dalhousie University

Halifax, Nova Scotia

To Whom It May Concern,

We are a group of 4 undergraduate students administering a survey as part of a research project for a upper-level undergraduate problem-solving course. The focus of our project is to better understand potential environmental policies, practices and procedures that are demonstrated in the Faculty of Arts and Social Science at Dalhousie University. This study will include feedback provided by members of your faculty, and will allow for an exploration of various environmental issues. The survey should take approximately 5 minutes to complete, and will be collected immediately thereafter.

All information submitted in this survey will remain strictly confidential as your name will never be recorded in association with the responses. Once the information has been collected and analyzed, the original surveys will be destroyed upon project completion in April. If at any time you do not wish to complete any part of the survey, or would like your responses removed, please let us know immediately, or at your earliest convenience via the e-mail address below.

This study has received ethics approval and is under the supervision of Dr. Tarah Wright. Should you have any further questions or concerns, please feel free to contact any member of our team, or Dr. Wright.

Faculty Survey Coordinators : skclarke@dal.ca

(Alyssa Forman, Suzanne Clarke, Sarah Warren and Mike Leonard)

Dr. Tarah Wright: tarah.wright@dal.ca

Thank you. We appreciate your time and effort during the completion of this survey.

This letter has been printed on 80% post consumer paper

Confirmation of Informed Consent

I have read and understood the information above and am a willing participant therein.

Signature of Participant

Printed name of participant

Date

I hereby acknowledge the provision of an information letter to the participant and have witnessed their signature of consent.

Signature of Surveyor

Printed name of Surveyor

Date

APPENDIX H

Faculty of Arts and Social Sciences (FASS) Survey

This survey is part of a research project for a 3000 level Problem Solving course. The focus of this project is to better understand potential environmental policies, practices and procedures that are demonstrated in the Faculty of Arts and Social Science at Dalhousie University. The data collected will be analyzed and presented to our class.

If you would like a copy of the results please feel free to contact us.

Thank you for your time.

What Department/School/Program of primary appointment are you in: _____

How many years have you worked as a faculty member at Dalhousie University: _____

1. Please rate the following questions on a scale of 1-4 for importance (circle your answer):

	Not at all important			Very important
a. In general, how important are environmental issues to you?	1	2	3	4
b. How important is it to you that Dalhousie University becomes a model of environmentally-friendly practices through physical operations (eg. recycling, energy efficiency, greening buildings, etc.)?	1	2	3	4
c. How important is it to you that Dalhousie University becomes a model of environmentally-friendly practices through the creation of specific policies (eg. procurement policy, environmental policy, investment policies)?	1	2	3	4
d. How important is it to you that Dalhousie University becomes a model of environmentally-friendly practices through curriculum development (e.g. offering of courses, integration of environmental concepts into curriculum, etc.)?	1	2	3	4

2. a. Do you feel that FASS has an obligation to incorporate environmental education into their curriculum?

Not at all obligated			Very obligated
1	2	3	4

b. How familiar are you with Dalhousie University's current environmental management practices?

Not at all familiar			Very familiar
1	2	3	4

c. How satisfied are you with Dalhousie University's current management of environmental issues?

Not at all satisfied			Very satisfied
1	2	3	4

d. How personally responsible do you feel as a faculty member for Dalhousie University's current management of environmental issues?

Not at all responsible			Very responsible
1	2	3	4

3. Please identify which of these issues you feel are most problematic at Dalhousie University, where 1 is most problematic and 4 is least problematic.

	Not at all problematic			Very problematic
Local Transportation	1	2	3	4
Long Distance Transportation	1	2	3	4
Landscaping	1	2	3	4
Waste Management	1	2	3	4
Energy Use	1	2	3	4
Recycling	1	2	3	4
Food Production	1	2	3	4
Other	1	2	3	4

If other, please specify: _____

4. In your daily routine, which of the following activities do you practice?(please circle yes or no)

Recycling paper - yes / no

Printing double sided paper – yes / no

Making use of scrap paper – yes / no

Recycling cans and bottles – yes / no

Composting – yes / no

Accepting essays handed in online/Web CT – yes / no

Accepting essays printed double sided/on scrap paper – yes / no

Accepting essays without a title page – yes / no

Making use of digital course readers instead of printed readers/textbooks – yes / no

Other, please specify: _____

5. Are you aware of any day-to-day practices of environmental responsibility by fellow faculty members in FASS?

If no, please skip to question 7.

6. What types of environmental practices from the list below does your department/program/school currently follow? (please circle yes or no)

Recycling paper – yes / no

Printing double sided paper – yes / no

Making use of scrap paper – yes / no

Recycling cans and bottles – yes / no

Composting – yes / no

Accepting essays handed in online/Web CT – yes / no

Accepting essays printed double sided/on scrap paper – yes / no
Accepting essays without a title page – yes / no
Making use of digital course readers instead of printed readers/textbooks – yes / no

Other, please specify _____

7. Are you aware of any policies that are currently in place for ensuring environmentally responsible practices in FASS? (please circle yes or no)

Yes / No
(If no, please skip to question 9)

8. What types of environmental practices from the list below are you aware of that FASS follows? (please circle yes or no)

Recycling paper – yes / no
Printing double sided paper – yes / no
Making use of scrap paper – yes / no
Recycling cans and bottles – yes / no
Composting – yes / no
Accepting essays handed in online/Web CT – yes / no
Accepting essays printed double sided/on scrap paper – yes / no
Accepting essays without a title page – yes / no
Making use of digital course readers instead of printed readers/textbooks – yes / no
Other, please specify _____

9. a. Would you support the integration of environmental issues into the curriculum of your department/program/school offerings? (please circle yes or no)

Yes / No

b. If environmental issues were integrated into the curriculum of your department/program/school, which of the following methods would you prefer (please circle the letter that applies):

- a) A mandatory environmental course credit
- b) Integration of environmental studies/ education into course curriculum
- c) Other: _____

10. Please list the key initiatives, if any, you feel your faculty could engage in to create a more environmentally-friendly campus:

**Thank you for your time and participation in our study.
If you have further comments, questions, and concerns or require further information please contact us at skclarke@dal.ca**

APPENDIX I

Faculty of Arts and Social Sciences

Dalhousie University

Halifax, Nova Scotia

To Whom It May Concern,

Thank you for your participation in our research project for Environmental Science 3502: Environmental Problem Solving II. The completion of this survey will be an extremely valuable source of information for our project, and will help maintain and improve the Faculty of Arts and Social Sciences as a member of a more environmentally sustainable Dalhousie campus.

Through this research we will help to better understand the current behaviours and attitudes exhibited by members of the Faculty of Arts and Social Sciences concerning environmental management. The results of the survey will be presented to our class, as well as invited members of the university administration and interested members of your faculty. These results will also be reported in a final assignment that will be posted on the Environmental Programmes website.

Should you wish to be present at the formal presentation of our findings and/or receive an executive summary or a copy of the full report, please let us know via e-mail to the address below.

Sincerely,

The Faculty Survey Coordinators

(Alyssa Forman, Suzanne Clarke, Sarah Warren and Mike Leonard)

Email- skclarke@dal.ca

This letter has been printed on 80% post consumer paper

APPENDIX K - Quantitative Results of Survey Questions

Table K.1. Raw Quantitative Data Results From Faculty Survey Questions: 1-2

Question Asked	Subtotals of Answers Provided					
	Not at all important (1)	(2)	(3)	Very Important (4)	Don't Know	Left Blank
1a) In general, how important are environmental issues to you?	0	0	21	40	0	0
1b) How important is it to you that Dalhousie University becomes a model of environmentally-friendly practices through physical operations (eg. recycling, energy efficiency, greening buildings, etc.)?	2	1	18	40	0	0
1c) How important is it to you that Dalhousie University becomes a model of environmentally-friendly practices through the creation of specific policies (eg. procurement policy, environmental policy, investment policies)?	2	2	23	32	0	0
1d) How important is it to you that Dalhousie University becomes a model of environmentally-friendly practices through curriculum development (e.g. offering of courses, integration of environmental concepts into curriculum, etc.)?	5	11	24	20	1	0
	Not at all obligated (1)	(2)	(3)	Very Obligated (4)	Don't Know	Left Blank
2a) Do you feel that FASS has an obligation to incorporate environmental education into their curriculum?	7	16	20	14	1	3
	Not at all familiar (1)	(2)	(3)	Very familiar (4)	Don't know	Left Blank
2b) How familiar are you with Dalhousie University's current environmental management practices?	16	34	9	2	0	0
	Not at all satisfied (1)	(2)	(3)	Very satisfied (4)	Don't Know	Left Blank
2c) How satisfied are you with Dalhousie University's current management of environmental issues?	5	30	16	2	5	3
	Not at all responsible (1)	(2)	(3)	Very responsible (4)	Don't Know	Left Blank
2d) How personally responsible do you feel as a faculty member for Dalhousie University's current management of environmental issues?	10	20	22	4	2	3

Table K.2. Raw Quantitative Data Results From Faculty Survey Question: 3

Question Asked	Subtotals of Answers Provided					
	Not at all problematic (1)	(2)	(3)	Very problematic (4)	Don't Know	Left Blank
3) Please identify which of these issues you feel are most problematic at Dalhousie University:						
- Local Transportation	7	15	15	16	4	4
- Long distance transportation	5	17	12	16	6	2
- Landscaping	10	22	11	5	9	4
- Waste Management	4	15	19	12	7	3
- Energy Use	0	4	22	26	6	3
- Recycling	4	25	15	9	5	3
- Food Production	3	13	13	14	12	6
- Other		7			4	50

Table K.3. Raw Quantitative Data Results From Faculty Survey Questions: 4-8

Question Asked	Subtotals of Answers Provided				
	YES	NO	Other		Left Blank
			sometimes	Don't know	
4) In your daily routine which of the following activities do you practice:					
- recycling paper	58	2	0	1	0
- printing double sided	45	13	2	0	1
- making use of scrap paper	50	7	3	0	1
- recycling cans and bottles	59	0	0	0	2
- composting	38	21	0	0	2
- accepting essays handed in online/web CT	28	30	1	0	2
- accepting essays printed double sided/on scrap paper	47	12	0	0	2
- accepting essays without a title page	47	13	0	0	1
- making use of digital course readers instead of printed readers/textbooks	25	34	1	0	1
- other	9	0	0	1	51
	YES	NO	Other		Left Blank
			Sometimes	Don't Know	
5) Are you aware of any day-to-day practices of environmental responsibility by fellow faculty members in FASS?	26	33	0	0	2

6) What types of environmental practices does your department/program/school currently follow :	YES	NO	Other		Left Blank
			Sometimes	Don't Know	
- recycling paper	30	0	0	0	31
- printing double sided	21	7	0	2	31
- making use of scrap paper	16	12	1	1	31
- recycling cans and bottles	28	1	0	1	31
- composting	9	18	1	2	31
- accepting essays handed in online/web CT	11	13	0	6	31
- accepting essays printed double sided/on scrap paper	13	9	2	6	31
- accepting essays without a title page	17	5	1	7	31
-making use if digital course readers instead of printed readers/textbooks	5	9	1	15	31
-other	0	0	0	0	61
	YES	NO	Other		Left Blank
			Sometimes	Don't Know	
7) Are you aware of any policies that are currently in place for ensuring environmentally responsible practices in FASS?	10	44	0	2	5
8) What types of environmental practices from the list below are you aware of that the FASS follows:	YES	NO	Other		Left Blank
			Sometimes	Don't Know	
- recycling paper	13	4	0	2	42
- printing double sided	6	9	0	2	44
- making use of scrap paper	6	9	0	2	44
- recycling cans and bottles	13	3	0	2	43
- composting	7	8	0	33	43
- accepting essays handed in online/web CT	8	7	0	2	44
- accepting essays printed double sided/on scrap paper	8	7	0	2	44
- accepting essays without a title page	6	8	0	3	44
-making use if digital course readers instead of printed readers/textbooks	8	12	0	3	44
-other	0	0	0	0	0

Table K.4. Raw Quantitative Data Results From Faculty Survey Question: 9 a.

Question Asked	Subtotals of Answers Provided				Left Blank
	YES	NO	Other		
			sometimes	Don't know	
9a) Would you support the integration of environmental issues into the curriculum of your department/program/school offerings?	40	14	3	1	3

Table K.5. Raw Quantitative Data Results From Faculty Survey Question: 9 b.

Question Asked	Possible Answers	Subtotal of the answers	
9b) If environmental issues were integrated into the curriculum of your department/program/school, which of the following methods would you prefer?	A - A mandatory environmental course credit	2	
	B - Integration of environmental studies/education into course curriculum	29	
	C - Other	-gave an alternative answer	14
		- more than one of A / B / C circled	4
		- don't know	1
- left blank	11		

Table K.6. Quantitative Results for Faculty Participants and Reasons for Non-participants

Outcome of faculty selected for sample	Reason participated or didn't participate	Frequency
Current Faculty	-Completed the survey	61
	-Declined (didn't want to participate)	5
	-Too busy	9
	-Sabbatical or on leave (medical, maternity, out of the country, etc.)	15
	-At a conference & off campus/out of town	2
	-English not strong enough/language barrier	1
	-Cross faculty (were not comfortable completing the survey because not primary faculty association)	6
Not eligible Faculty	-No longer works here/away for several years/ Retired/not teaching/ summer part time faculty	10
	-Actually students	4
Unable to make contact		7
Total sample size		120

Table K.7. Quantitative Results for Methods of Survey Administration

Survey Technique	Number of surveys done using this method
In person	54
Through email	2
Dropped off and picked up	5
Total	61

Table K.8. Distribution of returned surveys across FASS department / school / program

FASS department/school/program	Number of sample
Canadian Studies	0
Classics	5
Comparative Religion	0
Linguistics	0
English	7
French	1
Gender and Women's Studies	0
German	2
International Development Studies	6
History	7
Music	3
Philosophy	7
Political Science	7
Russian	0
Spanish	3
Social Anthropology and Sociology	8
Theater	2
Unknown	5
Total	61

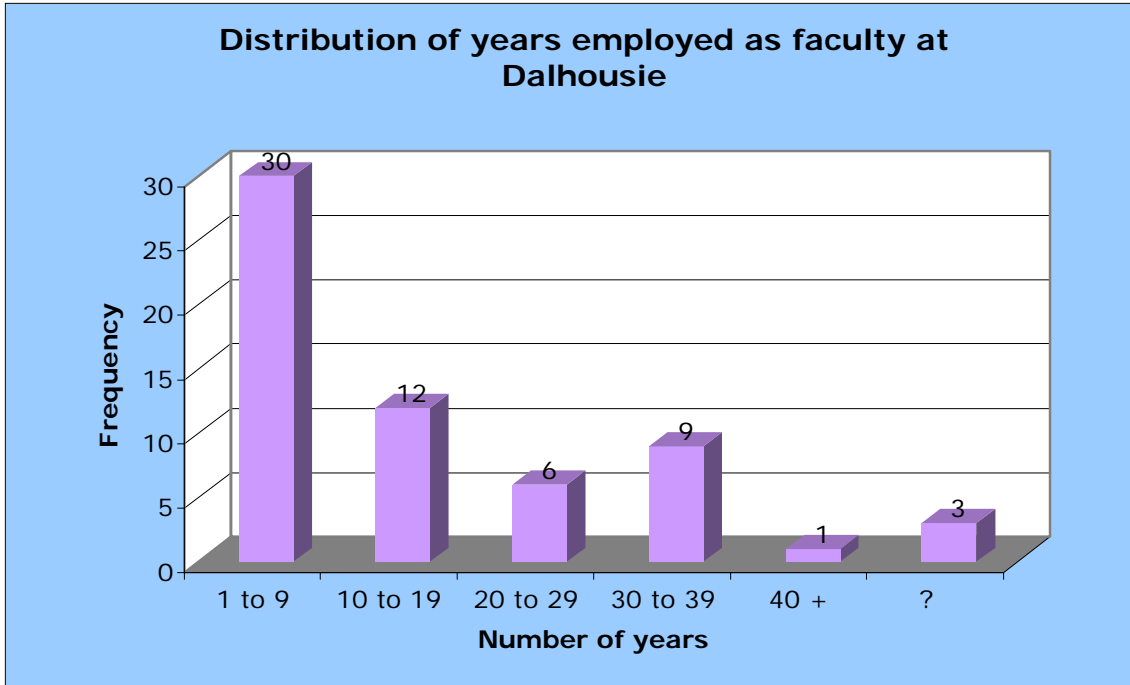


Fig. K.1 The distribution of the FASS faculty sample by number of years employed as faculty

APPENDIX L – Qualitative Raw Data

Question 10. Key initiatives/other comments regarding how to create a more environmentally-friendly campus

4 MAIN CATAGORIES

Category # 1 - Increasing communication and hold workshops

Communication

- “TALK ABOUT IT”
- “publicize more widely environmental practices as question 8 suggests”
- “put info page with link on Dalhousie home page/webpage”
- “involve in local debates/studies of pollution (eg. Harbour cleanup etc.)”

Hold workshops

- “hold workshops” (said by 2 people)
- more engagement of faculty

Category # 2 – Form a committee to review environmental issues and suggest changes within the FASS

-“form committee to look at all these issues and suggest changes” (said by 2 people)

- “we are talking about trying to hire someone who works on the environment(within the faculty, teaching on such issues)”
- “long-term planning, integrating into an “advancement” initiative”
- “generally get serious and look at all the operations with environmental consciousness from the food we serve to the ways we communicate”
- “create faculty committee to develop strategies”
- “-university should aim to become a sustainable community”
- “Biology has an environmental committee and tries to be as efficient and eco-friendly as we practically can”

Category #3 – Increase effectiveness of current practices and policies while standardizing curriculum

- “FASS or departmental consensus on policies and practices rather than each faculty member deciding for themselves”
- “a request from the dean to incorporate –if pertinent- material into curriculum”
- “have experts visit programs and more classes on landscape values or on environmental Studies minor”
- “offer more courses, participate in seminars, etc”
- “annual competition for ideas to promote environmental harmony”
- “curriculum changes per se are another matter-how could the subject matter of Greek or Latin be made more environmental”
- “offer more courses on environmental history”
- “more classes on environmental history”
- “incorporating it into existing courses!”
- “alter budgeting to favour the growth and development of environmental programs at both the faculty and departmental level”

Category #4 - Implement programs to encourage reduction in consumption patterns and to prevent overuse of materials

- “Reduction in consumption/prevent overuse of materials”
- “energy use and food production are major problems!!!!”
- “produce as much energy as it consumes”
- “online books/texts”
- “reduce course readers”
- “fewer copies of reports and proposals (my ethics application included 15 copies of a 70 page doc.)”
- “honours/graduate thesis should be digitally recorded (secure / read only PDF files)”
- “more online course offerings”
- “large enough computer facilities so large 300 + students could take exams online”
- “decrease the amount of paper copies required administratively”
- “recycling of paper, batteries”
- “paper saving/reduce paper use/consumption/make use of scrap paper” (said by three people)
- “reduce excess heat to no more than 20 degrees”
- “more awareness on energy waste-lights” (said by two people)
- “change light bulbs to more enviro friendly ones”
- “heating- look at it”
- “keep lights off or on just for safety when rooms are not in use”
- “energy conservation program in class and Office 2004 Test Drive User”
- “reduce use of cars”
- “reduce travel to conference/use electronic conferencing”
- “green spaces without pesticides and less salt”
- “ride share services actively supported by student Union and faculty”
- “composting” (said by 3 people)
- “question what actually happens to what is composted”
- “insufficient/unregulated control of heating”
- “digital course readers should be better explored”
- “Henry Hicks needs better recycling and composting facilities –currently only do paper”
- “recycling electronics-computers etc.”
- “more bike racks/cycle paths, car deterrence”
- “bicycle to work”
- “carpooling”
- “better more effective composting”
- “making faculty more aware”
- “better use of green spaces”
- “stop the spitting around campus”
- “-offsetting airline travel”
- “reducing air travel”

- green space on university ave.
- “Purchase environmentally sound products/budgeting”
- “use post consumer paper/switch to it” (said by two people)
- “such facilities would cost the university minimal and be beneficial”
- “keeping it on the agenda during discussions about expenses, new facilities, remodeling and such”

OTHER COMMENTS WRITTEN ON THE SURVEY

Question 2. Other (need to know more/not familiar with & not obligated because covered by Enviro. Studies)

- “not obligated because covered by environmental studies I believe”
- “can’t answer because of 2b-wasn’t familiar/need to know more” (said by two people)
- “they depend”

- “Q.2.a-I think these measures would be wise or prudent, but I’m not sure they should be “obligatory” ”

Question 3. Other

- “Food consumption- almost no food is produced on campus, and a lot is consumed wastefully”
- “Air Quality is the most important and problematic”
- “Energy waste- Canadians are energy gluttons – there is a wide scale lack of awareness of energy wastage”
- “Inefficient door ways and hall ways for heat retention”
- “Waste management- should be waste elimination not management-waste is not necessary, it has been manufactured and encouraged”
- “landscaping-we learn about our environment more from landscapes than from anything else....therefore Dalhousie’s landscape must reflect environmental values. It has improved a bit since I first came to Dalhousie, but there is still along way to go”
- “not informed enough for an answer”
- “water”

Question 4. Other

- “I don’t own a printer and rarely need one”
- “use online course outlines”
- “electronic exam systems”
- “too many”
- “posting course material on Web CT/email (said by three people)-reducing class handouts and putting more on web CT”
- “take the bus” (said by two people)
- “does depend on the materials”
- “would but not available or no one has submitted to me”

- “composting-not available-would otherwise”
- “no one has ever submitted one to me”

Question 6. Other

- “varies by faculty member”
- “majority don’t”

Question 9. Other

- would not support-depends how proceed**
 - “NO-b/c not enough info to support”
- more than one option chosen**
 - “integrated and elective course”
 - “ both, mandatory and integration are appropriate in some contexts”
- in course policies/practices**
 - “education of faculty on submission and usefulness of electronic submissions from students”
- already have optional courses**
 - “already have such a course”
 - “optional course with environmental studies component” (two people said)
 - “other-optional course in each discipline (as relevant)”
 - “other-faculty has several environmental law course, though non are mandatory (LAW)”
 - “other-already have an environmental history class-it will not become a required class”
 - “there are already environmental ethics course...”
 - “several electives offered”

Other comments in that section

- “would be happy to incorporate material into course curriculum. However, this would have be just 1-2 lectures in a full year course”
- (b)-“where there is instructor competence/interest and student interest”
- (a)-“becomes preaching and forceful”
- “other-hiring a faculty member specifically on environmental literature”

**APPENDIX M – Ethics Form
(-previously handed in paper copy)**