

The Freshmen Focus



CSPS Winter Quarter 2013

Karissa Lidstrand
Eric MacDonald
Nick Peterson
Kiersten Sahlberg

Table of Contents

- 1.0 Executive Summary
 - 1.1 Identification of Issue
 - 1.2 What is Sustainability Literacy and Why is it Important?
- 2.0 Project Description
 - 2.1 Survey Methodology
 - 2.2 Survey Outline
- 3.0 Survey Analysis
- 4.0 Budget
- 5.0 Future Vision
- 6.0 Conclusion
- 7.0 Appendix
 - 7.1 Case Studies
 - 7.12 Arizona State University
 - 7.13 Ohio State University
 - 7.14 University of Maryland
 - 7.2 The Survey
 - 7.3 Results

1.0 Executive Summary

1.1 Identification of Issue

As issues of climate change and global warming come to the forefront of world politics, universities nationwide have adapted to better incorporate these relevant topics into classes and specified programs. These range from Sustainability Literacy courses, to Environmental Studies majors, to environmentally focused colleges. The question remains how necessary these programs are, how they are valued, and how they can be improved to most effectively educate the workforce of the future. We hope to address these questions through the implementation of an online freshmen survey.

From the research and information gathered about Western Washington University's sustainability programs, it has become apparent that there is not currently a system in place that measures student knowledge and understanding of sustainability issues. We hope to remedy this by producing a survey that will be administered to all freshmen through their English 101 classes. The survey will determine first year students' level of knowledge, their behavioral practices, and their general attitudes toward the topic of sustainability. We are targeting the freshman class because we feel that this will give a clear indication of the baseline understanding of sustainability prior to attending Western Washington University. In addition, the implementation of this survey would fulfill the STARS requirement for Education, boosting Western's overall rating.

1.2 What is Sustainability Literacy and Why is it Important?

Sustainability literacy refers to the global issues of greenhouse gas emissions, overpopulation, and general resource depletion, and how knowledgeable people are of these issues. By determining student knowledge of these topics upon entering college, the goal is to better tailor college curriculum to address areas where student understanding is lacking the most. This will ensure that students leave Western well informed on important environmental topics and carry this knowledge into their everyday behavior.

2.0 Project Description

2.1 Survey Methodology

In the fall of 2012 there were 2,700 freshmen enrolled at WWU. This number gives us a good, random sample from which to obtain data. Since English 101 is a required class for all freshmen, we are proposing to administer the survey in as many of those classes as possible. With the results we gain from this sample we can determine how much or how little students know about sustainability upon entering WWU. This will help professors better guide their curriculum for entry level classes, making an impact from the bottom up.

2.2 Survey Outline

The survey will include 24 questions, two of which are optional, and will be administered using the Google Docs Survey tool. There are three primary groups of questions, which consist of the following:

questions indicating student behavior, questions indicating student knowledge, and questions indicating student attitudes/values. By having a variety of questions we will be able to determine the aspects of sustainability in which students are most lacking.

Some behavioral questions we have included are;

- Did you practice sustainability before coming to Western?
- Do you recycle and if not, why?
- Do you use re-usable water bottles?
- How often do you minimize the waste you generate?
- Do you conserve electricity?

These types of questions will help us to determine how much students think about sustainability and incorporate it into their daily lives.

The second group of questions concern student knowledge on sustainability. We ask whether or not they know what a carbon footprint is, etc. These questions will help us to determine how well students are educated on sustainability prior to entering WWU. At the end of the survey we ask whether or not they would be interested in taking a sustainability course at Western or majoring/minoring in the sustainability field. We hope to use this knowledge to provide more effective and specified resources for current and future students based on their preferences.

3.0 Survey Analysis

The freshmen survey was implemented through the English 101 classes. The survey received 275 total responses and gathered some important information and comments. Some of the more noteworthy findings include:

- 68% of students said they were as environmentally minded as they are now as were before attending WWU; 32% said they were not
- 75% reported often or always using alternative modes of transportation such as buses, bicycles, and carpooling
- 95% of respondents said they do recycle
- 80% report that they never or only sometimes choose food conscientiously based on its impacts
- 81% never or only sometime purchase fair trade coffee
- Only 26% of respondents often or always power down electrical devices when not using them for more than 15 minutes
- 55% incorrectly answered what the Urban Heat Island Effect is
- 82% of students would like to learn more about environmental issues and sustainability while in college; only 48% would like to take a course focused on sustainability

These statistics indicate areas of strength and weakness in WWU’s campus sustainability movement. While it can be seen that recycling has been adopted as a normal practice by the majority of students, it appears that there has been less emphasis on the importance of powering down electrical devices while not in use. This suggests that WWU may put more emphasis on some behavioral practices over others. The answers gathered from the survey will be helpful in finding ways to better educate students about the environment and the sustainability movement. An optional comment box was included in the survey and helped us to get a better understanding of the point of view, frustrations, and ideas of the freshmen surveyed. We were able to gather themes from these comments and group them into specific categories as depicted in the table below:

Sustainability Is Great!	Sustainability Is Annoying!	What’s Sustainability?	We Need Better Signage!
<ul style="list-style-type: none"> • “What’s been happening so far is good! I’m glad all the rooms on campus have recycling.” • “I think the sustainability movement on our campus is a great thing because it is a big part of our generation’s future.” 	<ul style="list-style-type: none"> • “The hypocritical manner in which “sustainability” is being pushed is very annoying.” • “I feel like the tree huggers are too aggressive with their campaigning.” 	<ul style="list-style-type: none"> • “It’s not that I don’t care, but I really don’t hear about it.” • “I know that Western is very forward thinking when it comes to sustainability but other than in pamphlets and advertisements for the school, I don’t see a lot of it on a regular basis.” 	<ul style="list-style-type: none"> • “Need more signs to explain what is sustainable and what’s just garbage.” • “I have talked to many students on campus and I have found that many people do not understand the difference between all the recycling boxes.”

These themes suggest areas of strength and weakness for Western’s sustainability movement. While there were comments supporting sustainability on campus, there were also comments suggesting that there is a lack of awareness, that those supporting sustainability may be too pushy, and that recycling and composting bins are unclear. This is feedback that the university will be able to use in order to better approach promotion of sustainability on campus.

One issue we wished to address with this survey was potential bias. These freshmen were surveyed during the winter quarter of 2013. This means they may have already changed their viewpoints and practices before taking this survey, and this could skew some of the answers. However, the survey was aimed at freshmen and we believe it was thorough and proper. One tactic we used was to throw in some non-sustainability related questions so that students would not just attempt to put down all of the “right” answers on the survey. We included two questions about online banking and one about bringing a lunch to work/school. Thirty of the 275 responses were recorded as being from sophomores, juniors,

or seniors. This could also have some effect on the results. We can however see which answers were from which students and set them aside separately or completely throw them out if we prefer.

4.0 Budget

Due to the nature of the survey (online = paperless!) the total cost of the project will be no more than the brainpower used to generate the questions and gather the data. This makes the project especially ideal, as there is nothing for the university to lose financially, and abundant knowledge to gain from student feedback. We were conveniently able to distribute the survey through the English 101 classes in the computer labs. This is how we were able to avoid printing costs. A budget may be implemented in the future to use a stronger survey tool such as survey monkey, but we have had success with our Google Docs survey, and would recommend it for future use

5.0 Future Vision

In the next stage of the project we hope to develop a survey that can be used as an exit assessment for graduating seniors. We can then set a baseline for how much students have learned over the course of their academic career at Western. This will show how successful professors have been in teaching/expressing sustainability concepts to their students. In April of 2013, STARS is scheduled to change the current requirements for the "Sustainability Literacy Assessment" component of their rating system. The updated version of STARS (STARS 2.0) will award points based on the percentage of the student population surveyed and whether or not a follow-up assessment is conducted of the same group/cohort. For this reason it will be especially important to conduct an exit survey. It will also be important to eventually extend the survey beyond the freshmen class, as they only represent a small portion of the student population. This will earn WWU STARS points and contribute to the image of sustainability that the university has worked so hard to adopt. This survey will be an organic, living document that changes and grows with the times in order to remain relevant. It is our hope that we will be able to "pass the torch" to the Western Washington University office of Sustainability, and have them continue to administer the survey annually.

6.0 Conclusion

Environmental issues have undoubtedly altered the field of education. Through the implementation of our proposed freshmen survey, we will be able to obtain useful data to better guide environmental programs in the future and ensure students leave with a substantial knowledge of sustainability, regardless of their major. This survey will be a valuable tool used to increase emphasis on sustainability values and knowledge. This will have wide spread ramifications; influencing people to not only think more sustainably, but act sustainably as well. This sustainability survey provides the foundation for a brighter tomorrow.

7.0 Appendix

7.1 Case Studies

7.12 Arizona State University

Project home institution, title and start date:

Arizona State University, "Arizona State University Sustainability Literacy Survey", May 2011.

Purpose of the project?:

To assess students' sustainability knowledge, sustainable practices, attitudes about sustainability topics, and awareness about Arizona State University's sustainability initiatives, and to find a concise way to determine whether students were literate in sustainability topics and to get the most valuable data to be used for the sustainability practices office.

Size" & cost of the project?:

"Six page survey, 10-15 minutes, free?"

Timeline for project?:

Month of May for administration, unknown for results analysis.

Players/stakeholders involved?:

The University Sustainability Practices office, participating students.

Reception/perception of the project of the stakeholders?:

Found that the students who made the effort to take the survey were more likely to be ones who were generally interested in sustainability than the average student. The survey data supported this as 78% of the respondents said they had either a passion for or considerable interest in sustainability. The highest response rates came from students in the School of Sustainability, a small college, and the College of Liberal Arts and Sciences, ASU's largest college.

Biggest challenges? (at least three):

Not found, although only 268 students completed the survey, which seems low and may hint at a problem of survey exposure/lack of interest?

Results?:

The majority of respondents indicated that they felt sustainable behaviors were important or very important. When asked if they make an effort to be knowledgeable about sustainability and environmental issues or practice sustainable behaviors most respondents answered that they do so; and most also indicated that they usually or always practice sustainable behaviors. Juniors, Seniors, and Post-Graduates tended to answer the questions correctly more frequently than Freshmen or Sophomores. Respondents who indicated that they had a passion for or considerable interest in sustainability tended to answer the questions correctly more frequently than those who said they were neutral or had little interest in the subject. Notably, those who said they had no interest in sustainability also answered the literacy questions correctly more frequently.

Related future projects?: Continuing survey to be administered every spring.

7.13 Ohio State University

Project home institution, title and start date:

Ohio State University, Sustainability Literacy Survey, 2012

Purpose of the project?:

Measure multiple domains in student knowledge of sustainability including student values and beliefs, test for correlations between sustainability literacy and student values, attitudes, and behaviors.

“Size” & cost of the project?: 16 question survey, free?

Timeline for project?:

Several months for data collection, unsure of timeline for analysis and reporting.

Players/stakeholders involved?

Faculty and students in the OSU Environmental and Social Sustainability Lab, participating students, AASHE.

Reception/perception of the project of the stakeholders?:

19.3% response rate (sent to 10,000 undergraduates, but a higher response rate than expected), reporting at AASHE’s 2012 conference elicited a strong desire to collaborate in the development of a common assessment tool that could be used by numerous colleges and universities.

Biggest challenges? (at least three):

As listed in article - Developing an assessment and methodology that provides meaningful results can be difficult, analyzing and interpreting the results can be time-consuming, buy-in from administration may not be there, students may already be experiencing survey fatigue, no central assessment tool currently exists.

Results?:

The overall average score for OSU undergraduates was 69%. On average, students answered correctly 73% of environmental questions, 71% of social questions, and 61% of economic questions. A gradual increase in scores according to class level was found to be significant, the findings suggest that, although respondents tended to have slightly more liberal and environmentalist views, these differences were found to be non-significant. Researchers also found that students who took the survey only after complying with one or more requests for follow-up were slightly more likely to get a subset of the sustainability knowledge questions wrong.

Related future projects?:

Have spoken with representatives from several institutions but no commitments have been made.

Unintended consequences?:

A push for better coordination between institutions to measure sustainability literacy?

7.14 University of Maryland

Project home institution, title and start date:

University of Maryland; Sustainability Literacy Assessment; spring 2010.

Purpose of the project?:

Assessing the understanding of basic sustainability concepts among student population.

“Size” & cost of the project?:

25% (9,170 students) of student population; no cost reported, but thought to be little to none.

Timeline for project? :

Survey taken in spring 2010, full published paper with findings and review of methodology to have been released late 2012.

Players/stakeholders involved?:

UM and UM office of sustainability; relatively small project with no real financial pressures or institutional conflicts.

Reception/perception of the project of the stakeholders?:

UM may need to offer more sustainability classes, require one, or find a way to inform students better (no reception of stakeholders found in write up).

Biggest challenges? (at least three):

9,170 students were emailed, but only 1,442 completed the assessment; sorting results based on departments and other details such as number of sustainability related courses; finding a good variety of useful questions (all were multiple choice).

Results?:

Results were sorted into categories (departments, # of related courses taken, level of concern for environment); graduate students average score: 77%, undergraduate average score: 74%; some surprising answers found.

Related future projects?:

N/A.

Unintended consequences?:

N/A.

7.2 The Survey

Undergrad Survey: Western Washington University 2013

Please indicate your current academic level:

- Freshmen
- Sophomore
- Junior
- Senior

Please indicate where you are from:

- In state
- Out of state
- Out of country

Please indicate your gender:

- Male
- Female

Please indicate where you live:

- On campus
- Off campus

Before coming to Western, were you as environmentally minded?

- Yes
- No

Please rate the frequency with which you do the following:

	Always	Usually	Rarely	Never
Minimize the waste you generate (ex. reusable shopping bags, beverage containers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conserve Energy (ex. unplug phone charger when not in use, take shorter showers)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use alternative transportation (bus, bike, car pool, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Choose food conscientiously based on its impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What is your main mode of transportation to school?

- Drive your car
- Carpool
- Walk
- Bike
- Bus

Do you recycle?

- Yes
- No

Please select the statement that best describes why you do not recycle?

- I choose not to because I do not care to
- I choose not to because I think there are negative consequences of recycling
- I choose not to because I do not think recycling makes a positive difference
- I do not know how to recycle properly
- Recycling is inconvenient for me

Do you use internet banking?

- Yes
- No

Please select the statement that best describes why you do not use internet banking?

- I haven't set up an account
- I don't know how to
- I don't have any desire/need to

Do you bring your own lunch to school and/or work?

- Yes
- No

What is meant by the term carbon footprint?

- It refers to the size of the carbon chain in a given quantity of gasoline.
- The carbon left on the ground each time you take a step
- It refers to the greenhouse gasses released by burning fossil fuels for electricity and transportation
- All of the above
- Do not know

Which of the following statements about greenhouse gasses is FALSE?

- Humans would be better off without greenhouse gasses
- Greenhouse gasses allow solar radiation to reach Earth, but keep it from escaping back into space
- Increased greenhouse gasses trap solar radiation in the atmosphere
- There are many different greenhouse gasses, not just carbon dioxide
- All of the above are TRUE
- Do not know

The Urban Heat Island Effect is:

- An increased desire to live in rural areas
- An increased number of islands being discovered in tropical zones
- An increase in the number of cities that cut off exports and imports during hot summer months
- A rising of temperature in urban areas due to the density of buildings and other human structures and the sparseness of sunlight-absorbing greenery
- All of the above
- Do not know

Which of the following is a renewable resource?

- Oil
- Iron ore
- Trees
- Coal
- All of the above
- Do not know

"Sustainability" with regard to natural resources means:

- Using natural resources as slowly as possible
- Using only as much as is replaced by natural processes
- Not introducing new technology too quickly
- Discovering new resources to allow maximum economic growth
- Do not know

Which resources would you find most beneficial to help you learn more about sustainability? (Please select all that apply)

- Blogs
- Email communication
- In-person workshops / classes
- Large educational events, such as themed fairs
- On-campus signs
- Online workshops / classes
- Public forums
- Social media (ex. Facebook, Twitter, etc.)
- Websites

Please rate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Agree	Strongly Agree
Learn more about environmental issues and sustainability while in college	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take a course focused on sustainability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a sustainability minor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Major or double major in a sustainability major	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participate in a student organization/event focused on Sustainability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Of the following, which did you know was an example of sustainable practices before taking this survey? Please check all that apply.

- Selecting double-sided printing
- Serving fair trade coffee
- Keeping indoor temperatures close to outdoor temperatures and dressing for that temperature
- Limiting meat consumption
- Using alternative transportation
- Powering down electrical devices when not using them for more than 15 minutes
- Reporting building issues to Facilities Management for repairs
- Using video conferencing

Please indicate your general feelings towards the sustainability movement on campus. Check all that apply:

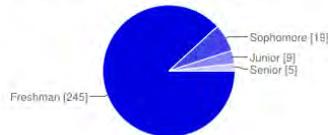
- It is annoying
- It is forceful
- It is fine
- It is awesome
- I don't really notice and/or care

OPTIONAL Please elaborate on the above response:

OPTIONAL If you have any questions or comments related to sustainability or this survey, please provide it in the space below:

7.3 Results: 275 Responses

Please indicate your current academic level:



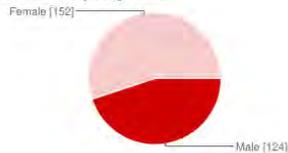
Freshman	245	88%
Sophomore	19	7%
Junior	9	3%
Senior	5	2%

Please indicate where you are from:



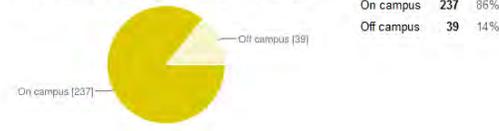
In state	234	84%
Out of state	40	14%
Outside of USA	3	1%

Please indicate your gender:

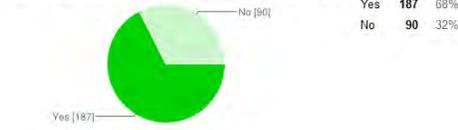


Male	124	45%
Female	152	55%

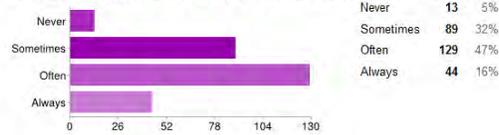
Please indicate where you live during the school year:



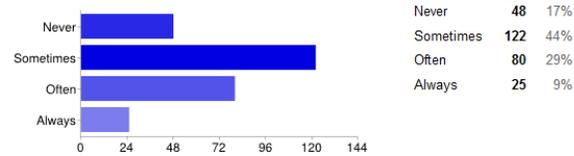
Before Western, were you as environmentally minded as you are now?



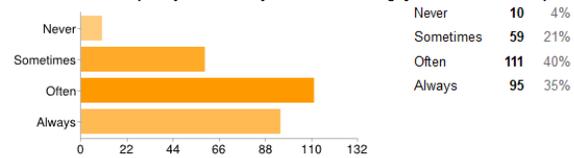
Please rate the frequency with which you do the following: [Minimize the waste you generate (ex. reusable shopping bags, beverage containers)]



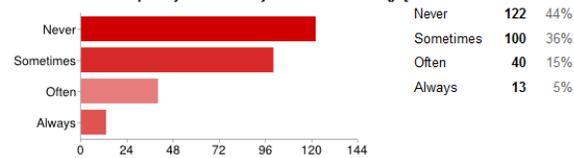
Please rate the frequency with which you do the following: [Conserve energy (ex. unplug phone charger when not in use, take shorter showers)]



Please rate the frequency with which you do the following: [Use alternative transportation (bus, bike, car pool, etc.)]



Please rate the frequency with which you do the following: [Choose food conscientiously based on its impacts]



What is your main mode of transportation to school?



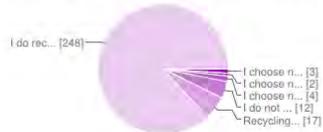
Drive your car	19	6%
Carpool	5	2%
Walk	213	73%
Bike	8	3%
Bus	48	16%

Do you recycle?



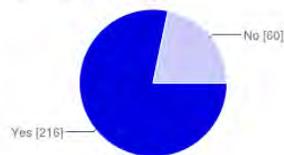
Yes	263	95%
No	14	5%

Please select the statement that best describes why you do not recycle?



I choose not to because I do not care to	3	1%
I choose not to because I think there are negative consequences of recycling	2	1%
I choose not to because I do not think recycling makes a positive difference	4	1%
I do not know how to recycle properly	12	4%
Recycling is inconvenient for me	17	6%
I do not recycle	248	87%

Do you use internet banking?



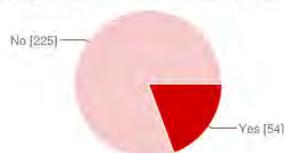
Yes	216	78%
No	60	22%

Please select the statement that best describes why you do not use internet banking?



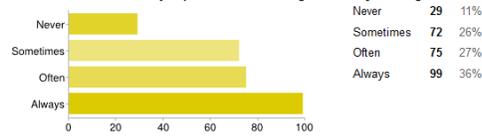
I haven't set up an account	17	6%
I don't know how to	26	9%
I don't have any desire/need to	25	9%
I do use internet banking	217	76%

Do you bring your own lunch to school and/or work?

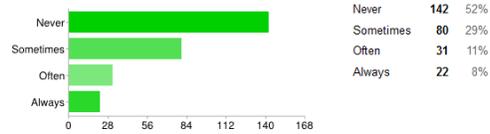


Yes	54	19%
No	225	81%

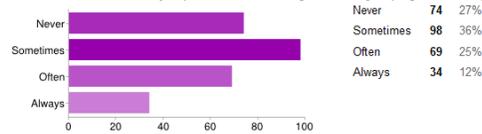
Please indicate how often you practice the following activities: [Selecting double-sided printing]



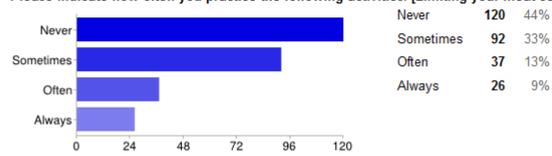
Please indicate how often you practice the following activities: [Purchasing fair trade coffee]



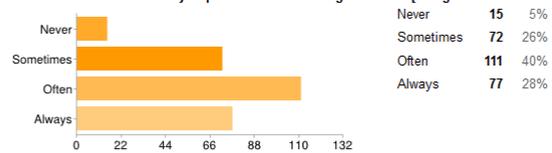
Please indicate how often you practice the following activities: [Keeping indoor temperatures close to outdoor temperatures and dressing for that temperature]



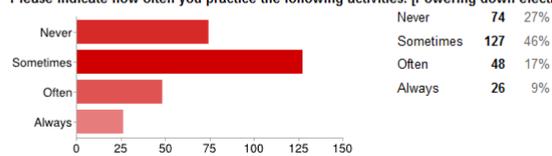
Please indicate how often you practice the following activities: [Limiting your meat consumption]



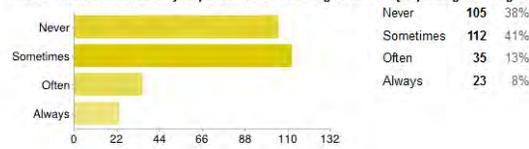
Please indicate how often you practice the following activities: [Using alternative transportation]



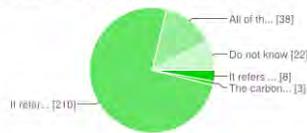
Please indicate how often you practice the following activities: [Powering down electrical devices when not using them for more than 15 minutes]



Please indicate how often you practice the following activities: [Reporting building issues to Facilities Management for repairs]

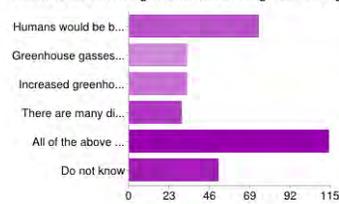


What is meant by the term carbon footprint?



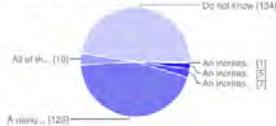
It refers to the size of the carbon chain in a given quantity of gasoline	8	3%
The carbon left on the ground each time you take a step	3	1%
It refers to the greenhouse gasses released by burning fossil fuels for electricity and transportation	210	75%
All of the above	38	14%
Do not know	22	8%

Which of the following statements about greenhouse gasses is FALSE?



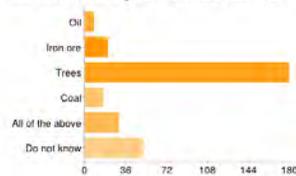
Humans would be better off without greenhouse gasses	74	22%
Greenhouse gasses allow solar radiation to reach Earth, but keep it from escaping back into space	33	10%
Increased greenhouse gasses trap solar radiation in the atmosphere	33	10%
There are many different greenhouse gasses, not just carbon dioxide	30	9%
All of the above are TRUE	114	34%
Do not know	51	15%

The Urban Heat Island Effect is:



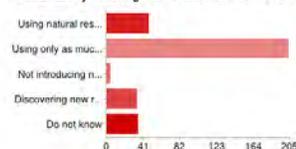
An increased desire to live in rural areas	1	0%
An increase in the number of islands being discovered in tropical zones	5	2%
An increase in the number of cities that cut off exports and imports during hot summer months	7	2%
A rising of temperature in urban areas due to the density of buildings and other human structures and the sparseness of sunlight-absorbing greenery	126	45%
All of the above	10	4%
Do not know	134	47%

Which of the following is/are renewable resources?



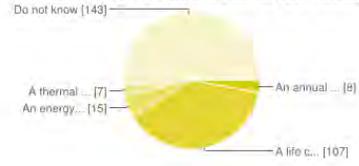
Oil	8	2%
Iron ore	20	7%
Trees	179	59%
Coal	16	5%
All of the above	30	10%
Do not know	51	17%

"Sustainability" with regard to natural resources means:



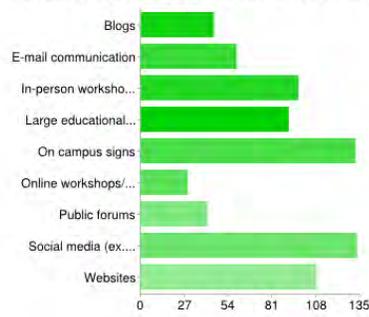
Using natural resources as slowly as possible	47	15%
Using only as much as is replaced by natural processes	203	63%
Not introducing new technology too quickly	4	1%
Discovering new resources to allow maximum economic growth	34	11%
Do not know	35	11%

A technique to assess environmental impacts associated with all of the stages of a product's life from cradle to grave (resource extraction through usage and di



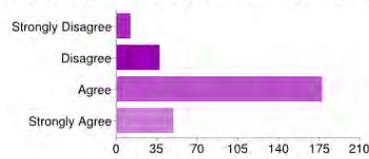
Technique	Count	Percentage
An annual review	8	3%
A life cycle assessment	107	38%
An energy audit	15	5%
A thermal system analysis	7	3%
Do not know	143	51%

Which resources would you find most beneficial to help you learn more about sustainability? (Please select all that apply)



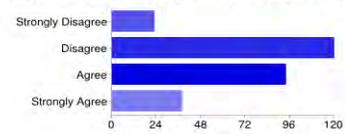
Resource	Count	Percentage
Blogs	45	6%
E-mail communication	59	8%
In-person workshops/classes	97	13%
Large educational events, such as themed affairs	91	12%
On campus signs	132	18%
Online workshops/classes	29	4%
Public forums	41	6%
Social media (ex. Facebook, Twitter, etc.)	133	18%
Websites	108	15%

Please rate your level of agreement with the following statements: [I would like to learn more about environmental issues and sustainability while in college]



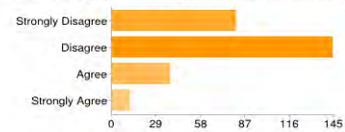
Agreement Level	Count	Percentage
Strongly Disagree	12	4%
Disagree	37	13%
Agree	177	64%
Strongly Agree	49	18%

Please rate your level of agreement with the following statements: [I would like to take a course focused on sustainability]



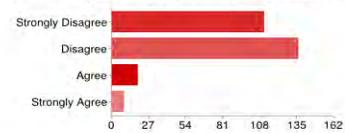
Agreement Level	Count	Percentage
Strongly Disagree	23	8%
Disagree	120	44%
Agree	94	34%
Strongly Agree	38	14%

Please rate your level of agreement with the following statements: [I would like to have a sustainability minor]



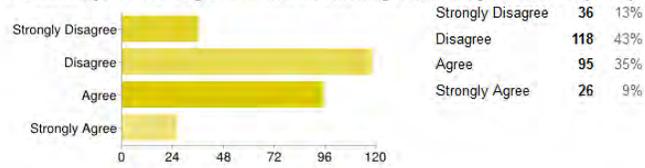
Agreement Level	Count	Percentage
Strongly Disagree	81	29%
Disagree	144	52%
Agree	38	14%
Strongly Agree	12	4%

Please rate your level of agreement with the following statements: [I would like to major or double major in sustainability]



Agreement Level	Count	Percentage
Strongly Disagree	111	40%
Disagree	136	49%
Agree	19	7%
Strongly Agree	9	3%

Please rate your level of agreement with the following statements: [I would like to participate in a student organization/event focused on sustainability]



Please indicate your general feelings towards the sustainability movement on campus. Check all that apply:

