

# Environment in the Curriculum

## A 2010 Survey of OSU Students

*Photo courtesy of Jeremy Bruskotter*



**THE ENVIRONMENTAL SOCIAL SCIENCE LABORATORY**  
**SCHOOL OF ENVIRONMENT & NATURAL RESOURCES**

# ENVIRONMENT IN THE CURRICULUM: A 2010 SURVEY OF OHIO STATE UNIVERSITY STUDENTS

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# ENVIRONMENT IN THE CURRICULUM: A 2010 SURVEY OF OHIO STATE UNIVERSITY STUDENTS

## Introduction

In the spring of 2010 the Environmental Social Science Lab, part of the School of Environment and Natural Resources (SENR), at The Ohio State University surveyed undergraduate students at the University to measure their attitudes towards the environment and gauge their interest in taking environmentally focuses courses. This survey effort was driven by the university's upcoming transition from the quarter-based academic calendar to one based on semesters. This transition presented SENR with the opportunity to reevaluate all of academic courses it offered, as well as introduce new ones. To ensure that new and existing courses being offered were in-line with students' interests and expectations, data from the survey informed when and where courses were offered, which courses would be retained, and which new courses would be implemented. This survey also presented the opportunity to gauge student's attitudes towards the environment, level of concern about threats to the environment, their level of risk perception toward such threats, and the extent to which they engaged in environmentally friendly behaviors. This data was collected to serve as baseline data, with plans of repeating this survey for longitudinal comparison.

## Study Methods

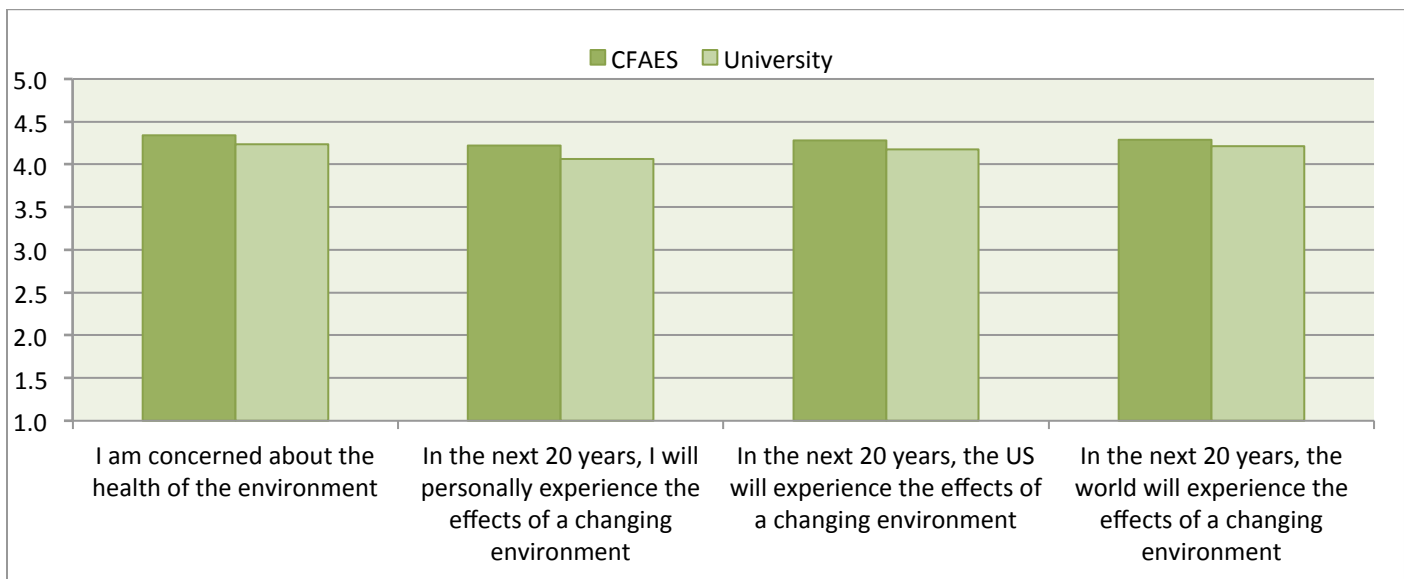
**Sampling.** The population of interest for this study included undergraduate students enrolled at The Ohio State University. The sampling frame was provided by the university registrar and contained email addresses for all undergraduate students who registered for courses during the most recent quarter (i.e. Winter, 2010). Because we were interested in making comparisons between students in the College of Food Agriculture and Environmental Sciences (CFAES) and those residing in other academic units, our sampling approach drew all available email addresses from students within CFAES (~2,100) and a random sample of 8,000 University-wide students (stratified by rank, i.e., freshman-sophomore, junior-senior). Note: Our sampling approach anticipated low response rates due to (a) method of contact, (b) population of interest (i.e. students), and (c) length of the survey instrument (see Dillman, 2007), necessitating the large sample size. There were also minor differences between the two different surveys, as the CFAES survey was sent out first and some of the response categories of the items were recalibrated for the University-wide survey.

**Method.** Students were contacted via their Ohio State University Buckeyemail account during the spring term of 2010. The email contained information about the purpose of the study, an invitation to participate, and a link to the online survey instrument. Emails were sent to CFAES students on three consecutive weeks during the month of March, while students in the University-wide sample were contacted in a similar fashion in May. In total, we received 306 responses from the CFAES sample and 969 responses from the University-wide sample, providing response rates of 15% and 12%, respectively.

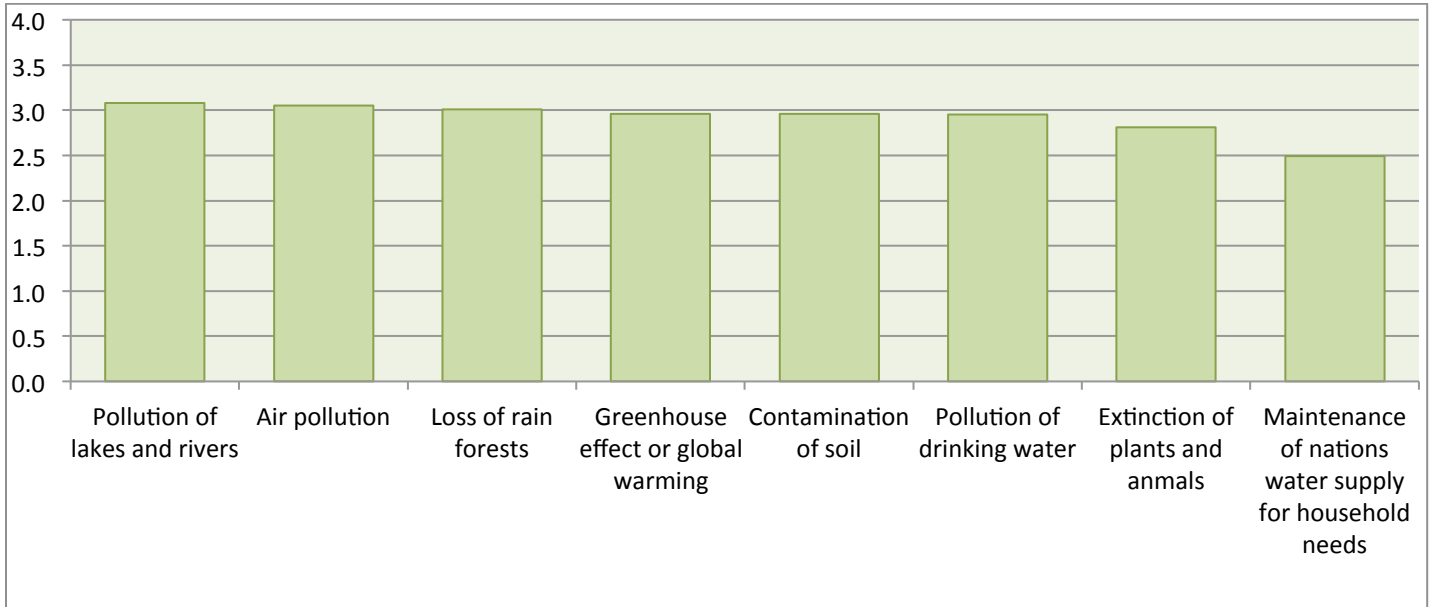
**Instrumentation.** The final survey instrument contained more than 100 questions designed to assess a variety of topics. In addition to socio-demographic information (i.e., gender, age, major, minor, etc), topics included inquiries into their preferred day and time of offering, preferred method of learning about courses on campus, factors influencing the courses they take, motivations for pursuing a particular career path, and the types of environmental classes students would be interested in taking. These academically oriented questions were followed by questions concerning students' childhood experiences, environmental attitudes, perceived environmental risks, and environmental behaviors. Wherever possible, latent constructs were measured using previously validated measures from the peer-reviewed literature. Student's *environmental risk perceptions* were adapted from the Leiserowitz survey instrument that explored American risk perceptions of global climate change impacts at both a global and local scale (2005). Student's responses were entered on a five-point likert type scale. Student's *attitudes towards the environment* were measured with the revised New Environmental Paradigm (NEP) scale (Dunlap et al., 2000). This was also entered as a five-point likert-type scale. Lastly, *environmental behavior* was measured as the self-reported frequency of environmentally friendly behaviors such as recycling, purchasing organic food, and using public transportation on a 4 point scale from never to often with an additional "don't know" option (Karp, 1996).

## ENVIRONMENTAL RISK PERCEPTION, ATTITUDES, AND BEHAVIORS

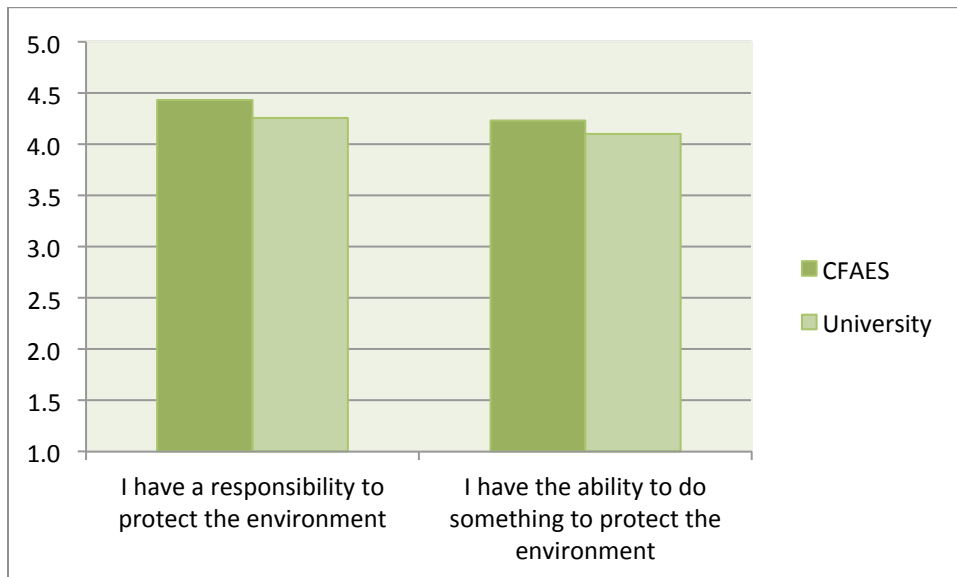
**Environmental Risk Perception, Ability and Responsibility.** Overall, there was very little difference between groups for risk perception, with a moderately high level of perceived risk throughout (Figure 1). Interestingly, on average, students believed the effects of a changing environment would be felt personally and globally (adult samples typically show a bias toward a belief in negative impacts at global but not local scales). In terms of concern about specific environmental issues, students appeared to be more concerned about water quality than water quantity issues, but in general showed fairly high levels of concern for a variety of issues (Figure 2). Finally, in terms of beliefs about their ability and responsibility to protect the environment (Figure 3), the sense of responsibility was slightly higher than the perceived ability, indicating a motivation to act but perhaps a belief that they are not as able to make a difference. Students in the College of Food, Ag, and Environmental Science again reported a slightly higher sense of responsibility and ability compared to students across the University. Again, this trend could be due to the large sample of Environment and Natural Resource Majors in the CFAES sample.



**Figure 1.** Mean responses for environmental risk perception scale items from 1 (strongly disagree) to 5 (strongly agree)

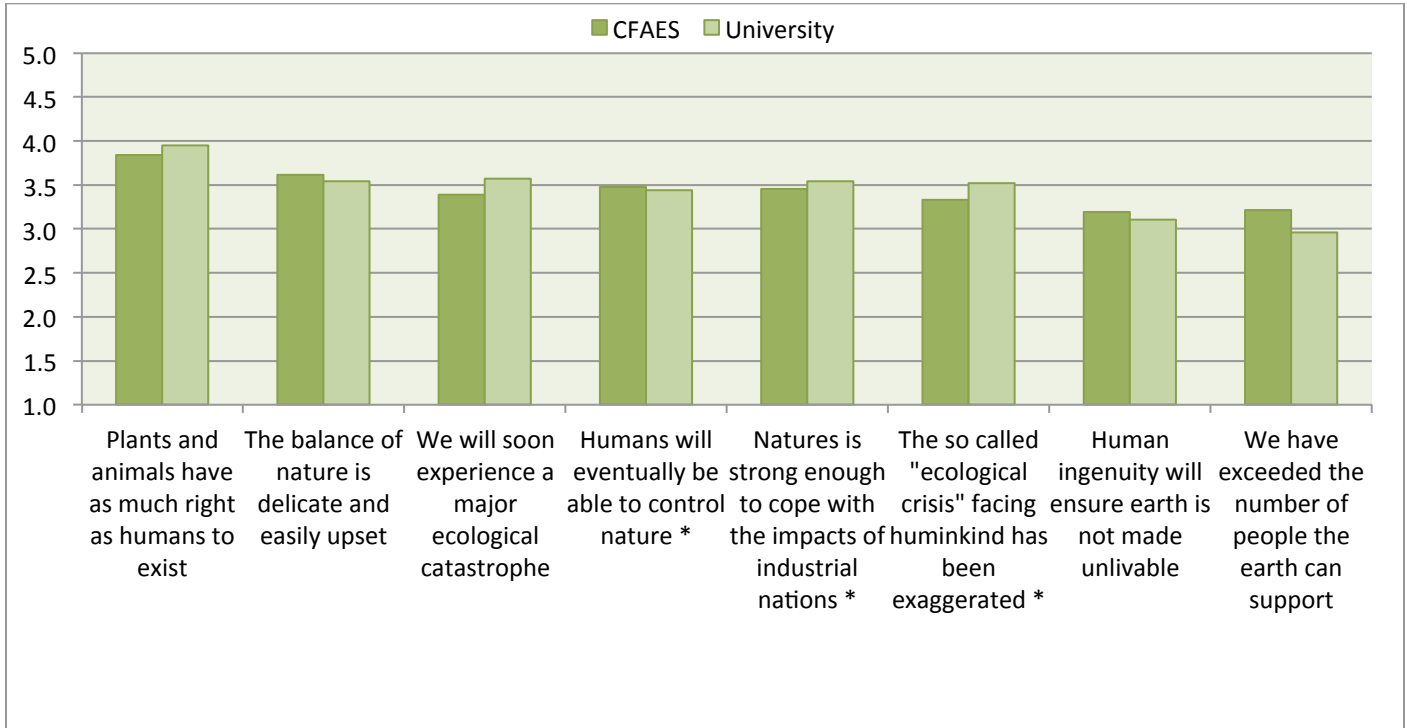


**Figure 2.** Mean responses for level of concern for various environmental problems. Responses ranged from 0 (no opinion) to 4 (a great deal). *Note: data is from the University wide sample only.*



**Figure 3.** Mean responses for ability and responsibility to protect the environment from 1 (strongly disagree) to 5 (strongly agree)

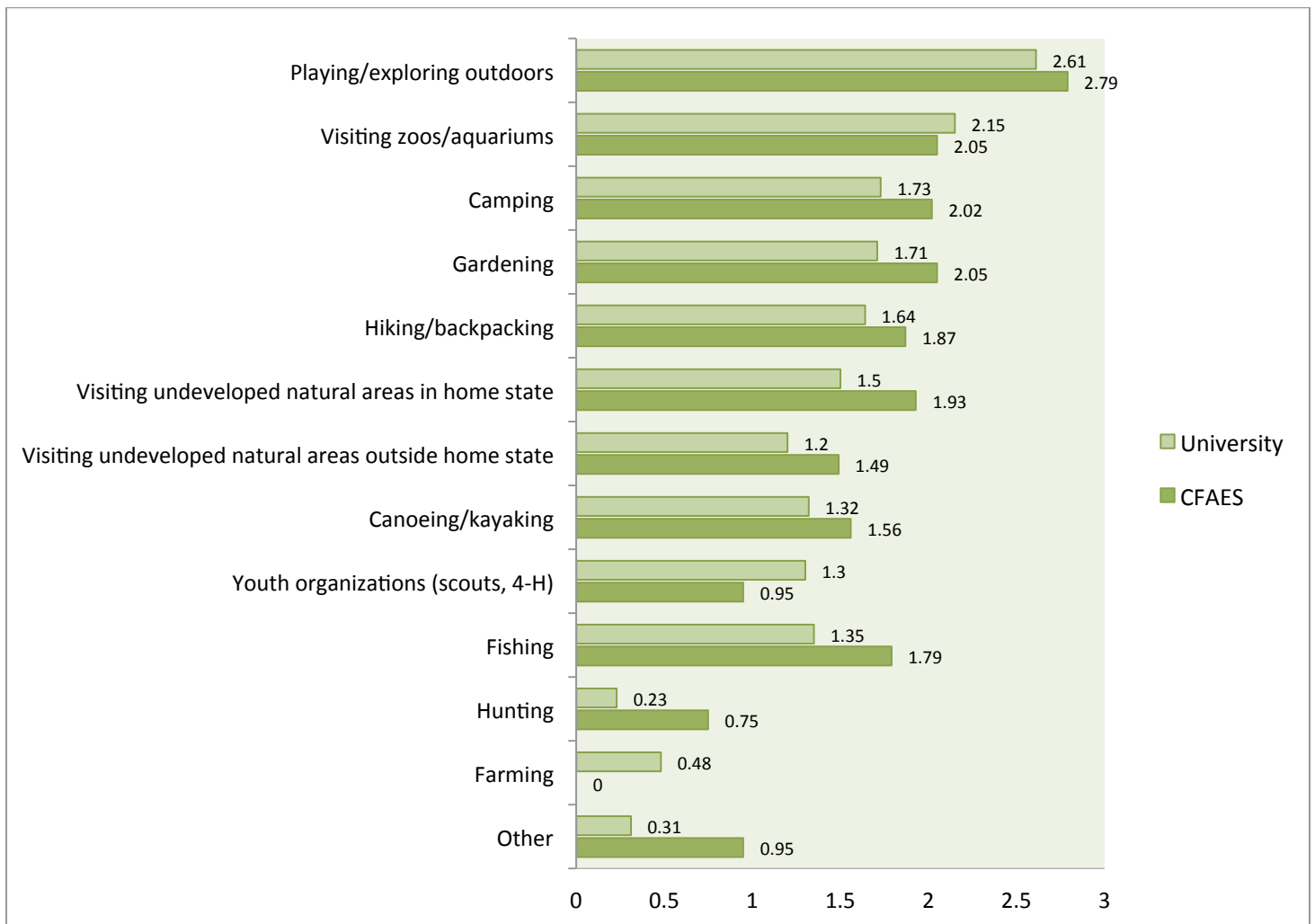
**Environmental Attitudes.** Again, there are very little differences between the two groups in terms of their environmental attitudes (Figure 4). In general, students report mildly pro-environmental attitudes.



**Figure 4.** Mean responses for New Ecological Paradigm (NEP) scale items measuring environmental attitudes from 1 (strongly disagree) to 5 (strongly agree). *Note: items marked with an asterisk have been reverse coded meaning a high score represents disagreement with the statement.*



**Childhood Experiences (Early Environmental Behaviors).** Respondents were asked to indicate how often they participated in a variety of outdoor events in the first 18 years of life. These items were coded with never (0), rarely (1), sometimes (2), and often (3). Figure 5 highlights the difference between the two sample populations in this early childhood category. CFAES respondents had a slightly higher overall mean score (1.55) for participation in outdoor activities than University-wide respondents (1.34). In every category except “visiting zoos/aquariums” and “youth organizations,” CFAES students reported a higher level of involvement. “Playing/exploring outdoors” had the highest participation mean (2.61 and 2.79) among both of the samples. While both University-wide and CFAES populations very rarely participated in hunting activities (0.23 and 0.75, respectively), this category provided the largest difference between the two groups with 0.52%. The category that provided the most similar response rate was “visiting zoos/aquariums” with 0.10% difference.



**Figure 5.** University-wide and CFAES samples' averaged mean scores for the types of activities and their level of participation in the first 18 years of their life. Never=0, Rarely=1, Sometimes=2, and Often=3. (Note—"farming" was not an option on the CFAES survey)

Both sample populations (University-wide and CFAES) were also asked, “When thinking about all the activities you did growing up, please indicate how much time you spent inside versus outside” (Figure 6). When comparing the responses from the University-wide sample to the CFAES sample, similarities and differences between how their childhood was spent were evident in the data. Both illustrate comparable results in the “mostly outside” (0.8% difference) and “mostly inside” (3.8% difference) categories. The largest variation exists in the “almost always outside” category where 16.1% more of the CFAES respondents spent their time.

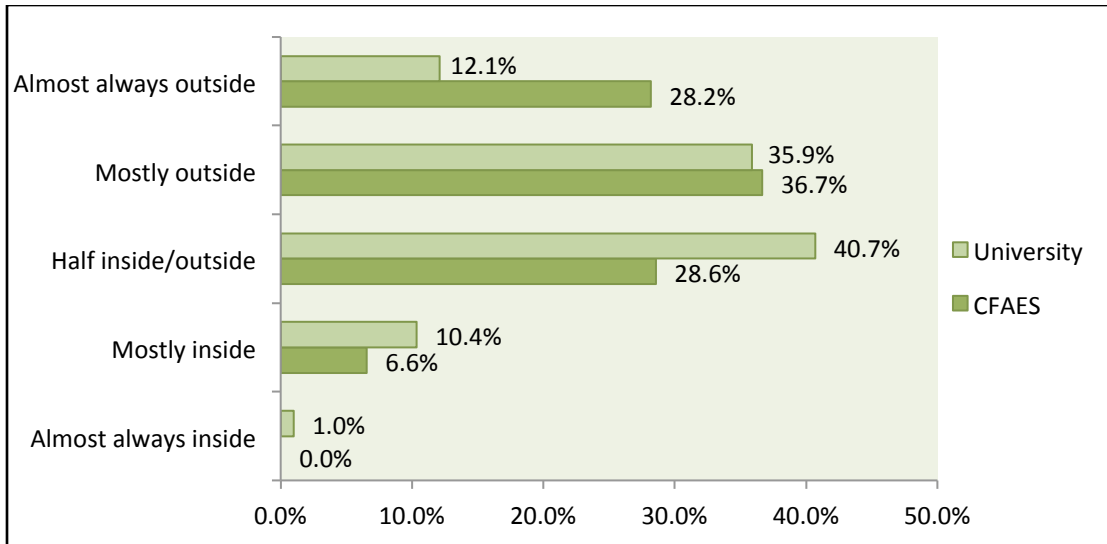


Figure 6. Amount of time spent inside or outside as a child by frequency of response.

**Adult Environmental Behaviors/Activities.** Respondents were asked if they engaged in specific environmental behaviors within the past year (Table 1). The University-wide survey showed a range of 49.3% - 98.8% of respondents participating in each of the response items, while the CFAES had a larger range of 37.1% - 97.2% (see Table 2). The highest percent of University respondents recycled (98.8%) within the last year while the CFAES respondents reported looking for ways to reuse things (97.2%). 96.1% of the CFAES respondents reported using a reusable shopping bag or water bottle while 97.4% of the University respondents participated in the same activity. 49.3% of the University respondents and 37.1% of the CFAES respondents reported that they voted for a candidate because of environmental views, the least participated in activity of the list. The reported behavior with the greatest difference in rates of participation between the two sample populations was the purchase of organically grown food with 78.3% of University respondents and 52.1% of CFAES respondents engaging in this activity. Overall, a majority of both University-wide and CFAES respondents participated in environmentally friendly behaviors, with CFAES students reporting slightly lower levels of participations.

**Table 1.** Percentage of respondents who engaged to some degree in the specific environmental behavior in the last year.

Response Item	% CFAES Yes	n	% University Yes	n
Recycled	95.4	261	98.8	824
Used a reusable water bottle or shopping bag	96.1	258	97.4	821
Looked for ways to reuse things	97.2	254	97.3	820
Purchased recycled products	95.0	239	96.7	798
Chose to walk or bike instead of drive	87.7	252	93.7	819
Encouraged friends or family to recycle	84.3	249	91.6	820
Used public transportation instead of drove	85.9	256	85.6	817
Purchased organically grown food	52.1	240	78.3	807
Read an environmental publication	64.4	233	65.5	811
Volunteered time to an environmental cause	49.6	236	59.7	821
Voted for a candidate because of environmental views	37.1	213	49.3	755

## Field of Study and Course Interests

**Current Major.** Students were asked for their current major and then grouped (post-hoc) into broad categories for analysis (see Table 2) to reflect both disciplinary and organizational (i.e. colleges) differences at the University. One exception is the College of Food, Agriculture, and Environmental Sciences (CFAES), which was split into two fields of study: (a) Food and Agriculture and (b) Environment and Natural Resources. As the only college that offers undergraduate programs that bridge disciplines of biological sciences, physical sciences, social and behavioral sciences, education, and business, it seemed appropriate to separate the college into two interdisciplinary fields of study.

**Table 2.** Number of subjects and the list of individual majors included in each field of study grouping. \*Accounts for over 10% of the subjects in that field of study. †Note: The large n of Food and Agricultural Sciences and Environment and Natural Resources is a result of the CFAES survey which targeted this specific population. (See Appendix II and II for a breakdown of subjects per individual major and minor for those in the CFAES sample).

Field of Study	n	Majors
Physical Science and Math	42	Astronomy, Chemistry*, Computer and Information Science, Geography*, Geological Science, Mathematics* and Physics
Engineering and Design	69	Architecture, City and Regional Planning, Engineering* (Chemical, Civil, Industrial, Mechanical), Industrial Design, Interior Design, Landscape Architecture, Visual Communication Design
Biological Sciences	83	Biochemistry, Biology*, Evolution and Ecology, Microbiology*, Molecular Genetics, Zoology*
Social and Behavioral Sciences	149	Communication*, Criminology, Economics, Journalism, Marketing, Political Science*, Psychology*, Social Work*, Sociology, Speech and Hearing Science
Arts and Humanities	133	African Studies, Anthropology, Art, Comparative Studies, Dance, English*, Foreign Languages*, History*, International Studies*, Linguistics, Music, Philosophy, Theatre, Women's Studies
Business and Management	105	Accounting*, Actuarial Science, Business Management, Business Administration*, Construction Management, Fashion and Retail Studies, Finance*, Health Information Management, Hospitality Management, Human Resources, Information Systems, Logistics, Medical Technology, Operations, Risk Management and Insurance
Health and Medicine	88	Athletic Training, Dental Hygiene, Dietetics*, Health Sciences*, Nutrition*, Nursing*, Pharmaceutical Sciences*, Radiologic Sciences, Respiratory Therapy
Education and Human Ecology	38	Exercise Science Education*, Family and Consumer Sciences Education, Human Development and Family Science*, Middle Childhood Education, Special Education, Sport and Leisure Studies*, Technical Education and Training
Food and Agricultural Sciences	151†	Agri-Business*, Agriculture Communications, Agriculture and Extension Education*, Animal Science*, Crop Science, Food Agricultural and Biological Engineering*, Food Science and Technology*, Landscape Horticulture, Plant Pathology, Turfgrass Science
Environment and Natural Resources	104†	Environmental Policy and Management*, Environmental Science*, Forestry Fisheries and Wildlife*, Parks Recreation and Tourism*

**School of Environment and Natural Resources Minor.**

Figure 7 summarizes the 828 responses given to the question as to whether or not respondents were pursuing a minor in the School of Environment and Natural Resources (SENR). The vast majority of respondents (762) or 92% were not, with only one percent (6) answering 'yes'. Seven percent of respondents (60) either did not understand what constituted an SENR minor or were not aware if they were pursuing one.

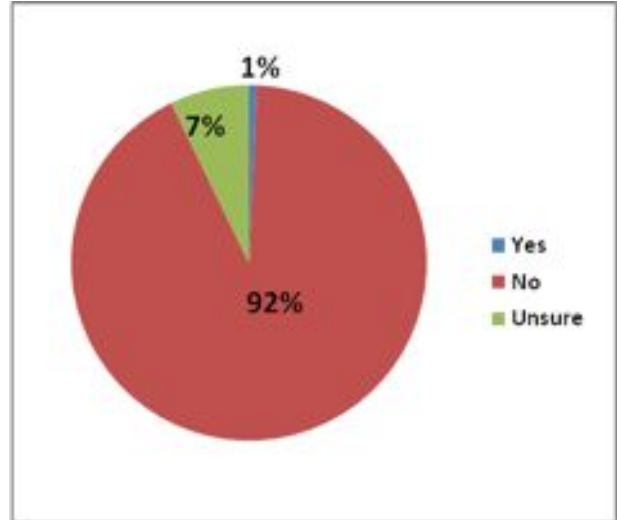


Figure 7. Respondents minoring in SENR (n=828)

**Class Ranking.** The class ranking of students who responded to the survey is shown in Figure 8. Note that in both surveys the highest numbers of respondents were seniors, and the lowest numbers of respondents were freshmen. While almost half of the respondents in the CFAES sample were seniors, only a little more than a quarter of the respondents in the University-wide sample were seniors. A higher percentage of freshmen also responded to the University-wide survey than to the CFAES survey.

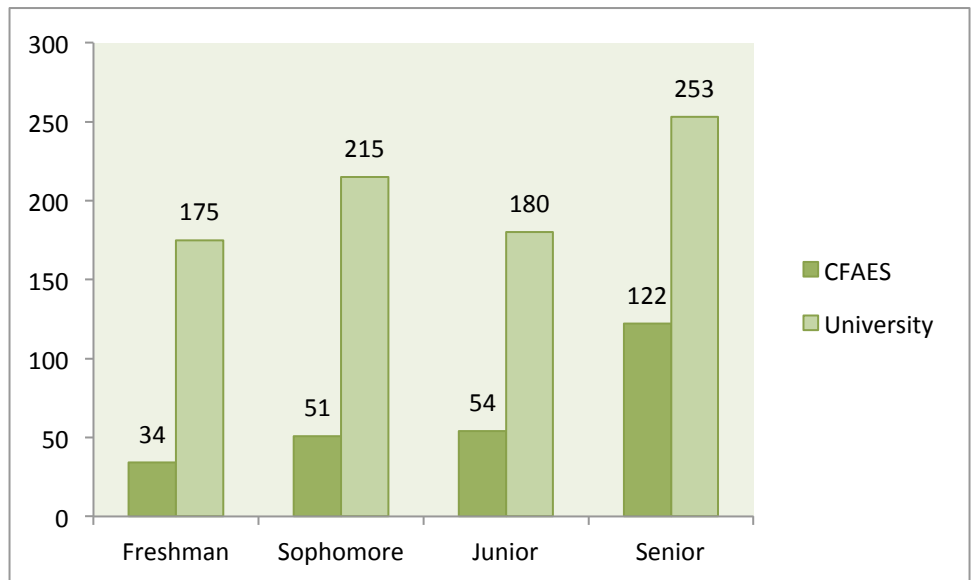


Figure 8. Class rank of Respondents

**Method of Learning about Offered Courses.** In order to learn more about how best to market classes during the upcoming semester conversion on campus, we asked a series of questions about preferred means of learning about courses (Figure 9). Students clearly relied on the online course catalog and conversations with classmates and friends. One potential advantage in CFAES may be the smaller class sizes allowing students to rely more on their classmates for feedback from peers than they perhaps would in the larger majors on Campus (e.g., Communication).

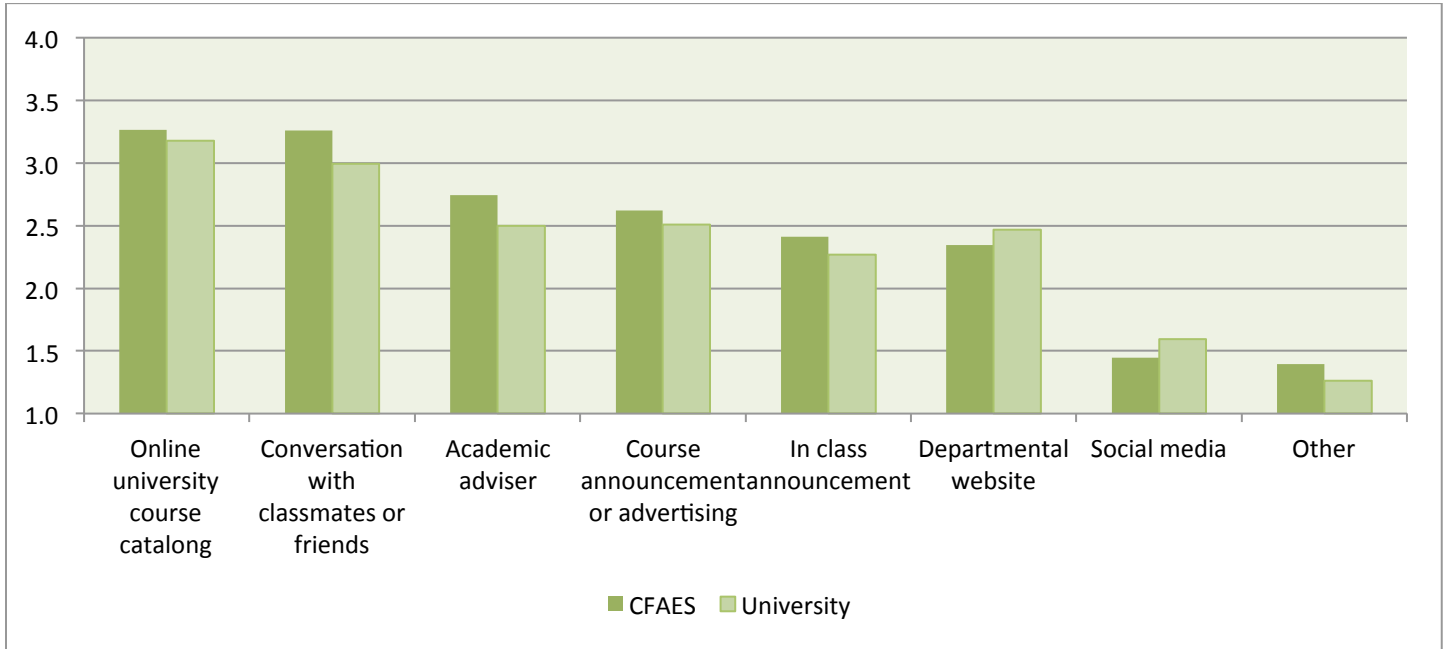


Figure 9. Reported method of learning about offered courses from 0 (never) to 4 (always).

**Factors influencing course selection.** Students were also asked about what influences their course selection (Figure 10), the results indicate that interest in the topic is the most important factor for both groups, while having access to the course on main campus is very important to students outside of CFAES. Strategically it makes sense to make potentially popular CFAES classes available in more convenient locations to increase enrollment.

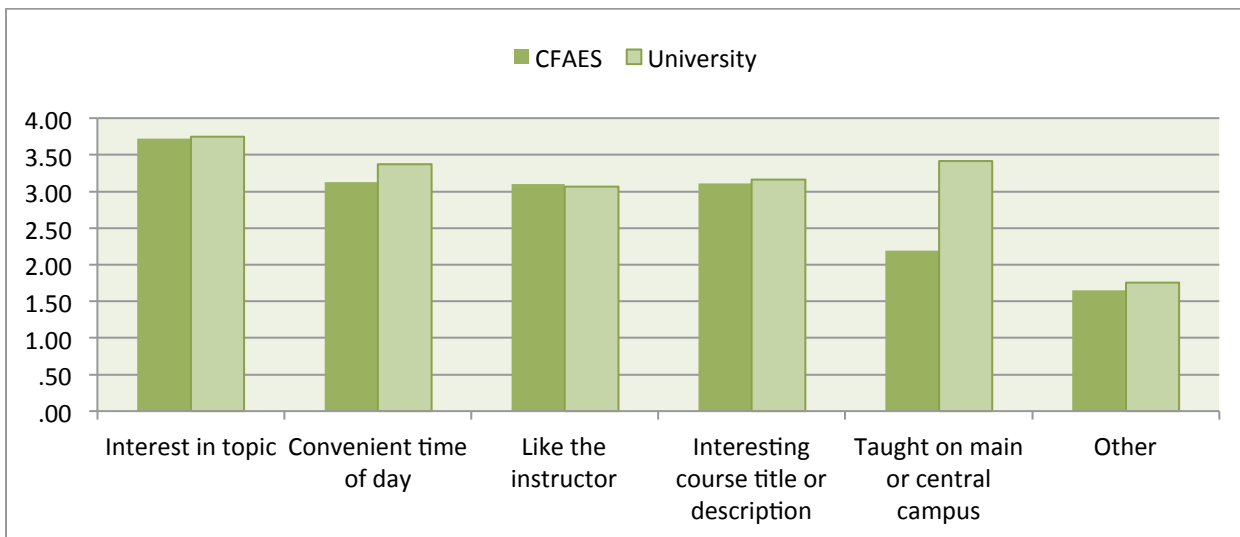


Figure 10. Factors influencing student selection of courses from 1 (does not influence) to 4 (greatly increases likelihood)

**Preferred Day, Time, and Length of Courses Offered.** Students were also asked to rank the day, length, and timing of classes in terms of their preference. The results indicate that classes offered on Tuesday/Thursday for 1.5 hours are preferred, following by Wednesday/Friday for 1 hour. Students also prefer the late morning time slot (from 10 am to 12 noon) followed by early afternoon (12 to 3 pm). It is our suggestion that required courses be offered in inopportune times (WF after 3 pm or before 10 am) while classes that are optional, and perhaps of interest to a broader audience across campus be offered during the ideal day/time combinations (TR late morning or early afternoon).

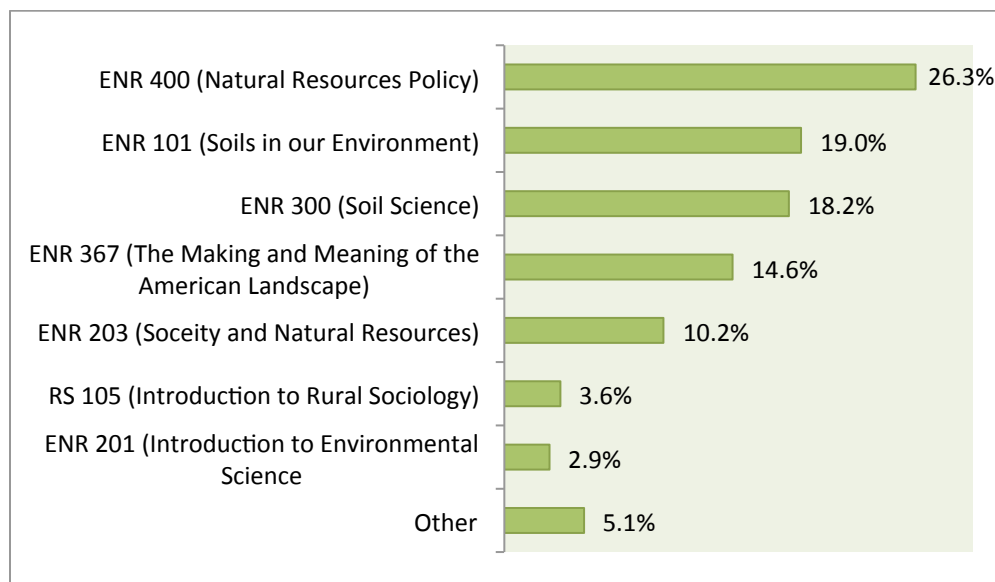
**Table 3.** Average ranking by students for various days and durations when courses could be offered. *Note: lower values denote greater preference.*

Day and duration of course	CFAES	University
Tue, Thurs - 1.5 hrs/day	1.40	1.39
Wed, Fri - 1 hr/day	2.42	2.60
Wed, Fri - 1.5 hrs/day	3.06	2.98
Mon - 3 hrs	3.12	3.03
<b>n</b>	293	850

**Table 4.** Average ranking by students for various times of the day when courses could be offered. *Note: lower values denote greater preference.*

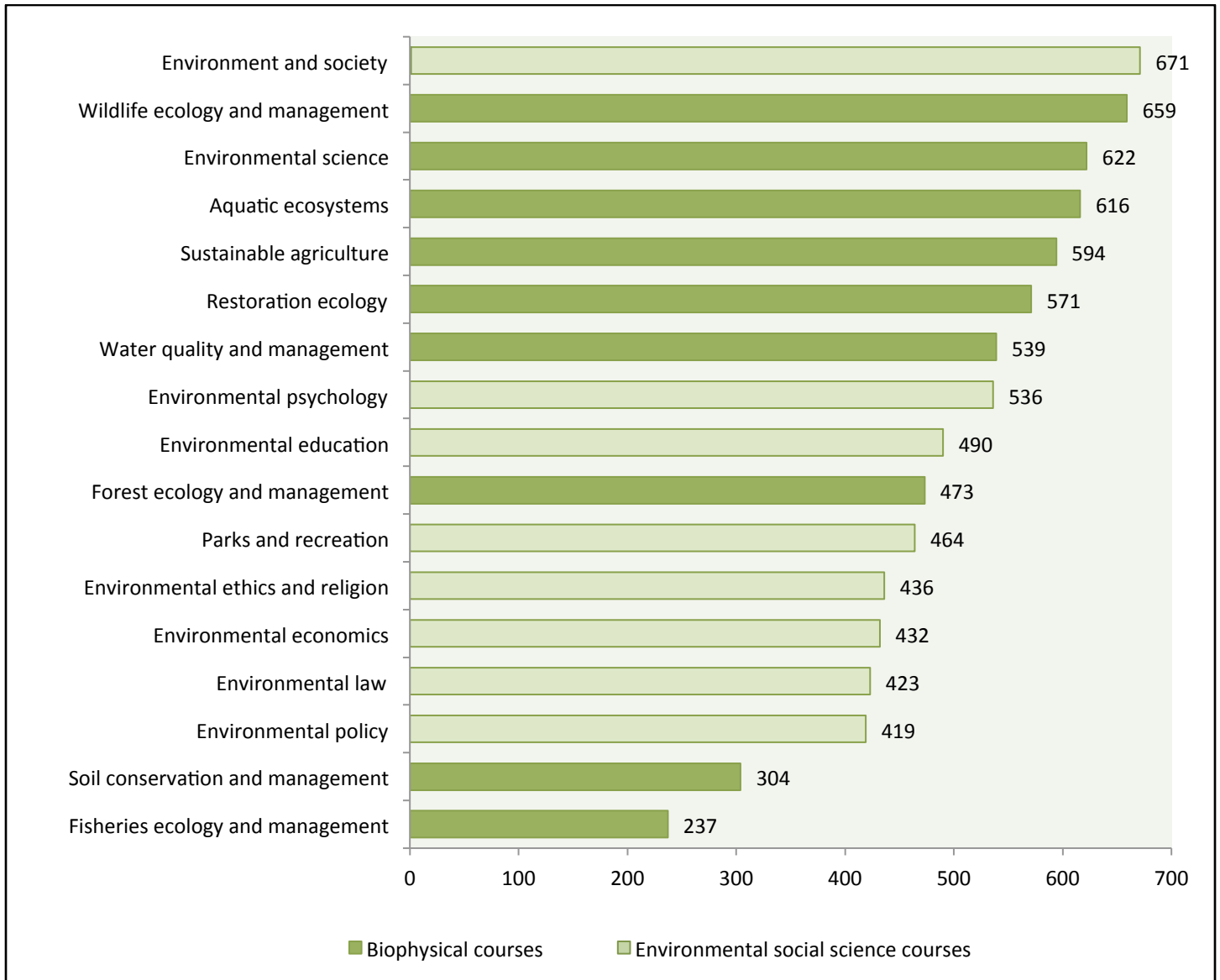
Time of day	CFAES	University
Late morning (10am-12noon)	1.52	1.67
Early afternoon (12noon-3pm)	2.32	2.23
Early morning (8am-10am)	2.89	3.33
Late afternoon (3pm-5pm)	3.61	3.32
Evening (after 5pm)	4.67	4.42
<b>n</b>	293	850

**Environment and Natural Resources Courses Taken.** Figure 11 summarizes the 137 University-wide responses to the question of whether or not they had completed any of the listed courses offered in ENR. The 137 responses came from 94 respondents, representing 11% of total respondents. More than 60% of the 137 responses were taking just three courses; ENR 400 or ENR 101 or ENR 300. An additional 27 open ended responses stated the name of a course taken but not listed.



**Figure 11.** SENR courses taken by students in the University-wide sample (n=137)

**Course Interest.** Students were given a list of environmental topics that represent course topics or potential course topics within the School of Environment and Natural Resources. They were asked to check the box next to any topic they were interested in learning about. The topics were split into a) biophysical science and b) social science groupings. Responses are compiled in Figure 12. While the most popular course, *Environment and Society*, is an environmental social science course, the next five most popular choices are biophysical science courses. Figures 13 and 14 separate the biophysical science and environmental social science courses into two separate groups.



**Figure 12.** Total number of students interested in selected environmentally focused courses split by topic



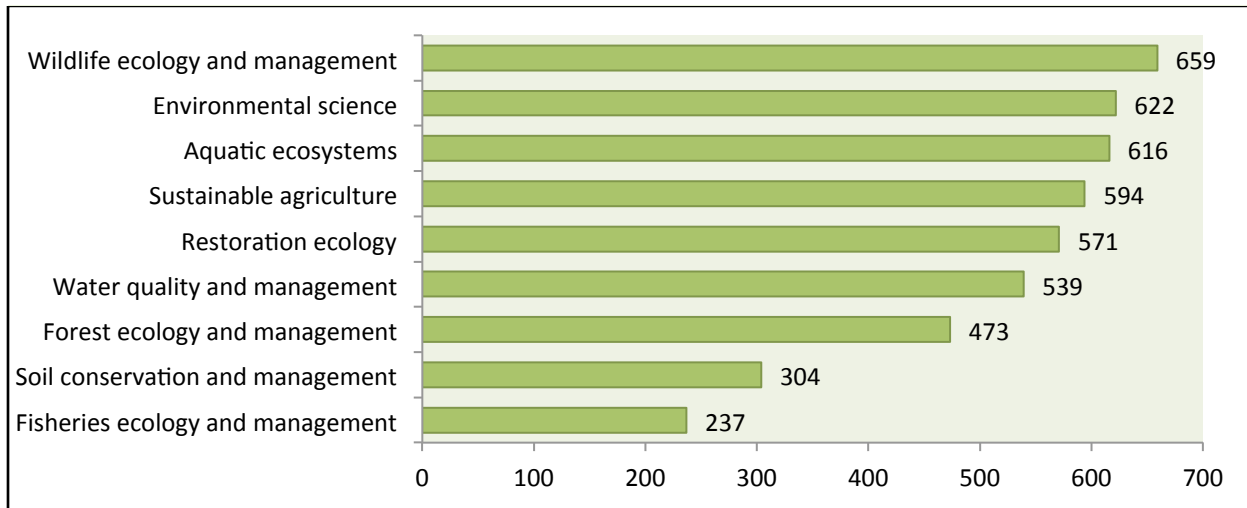


Figure 13. Total number of student interested in biophysical science courses (n=1273)

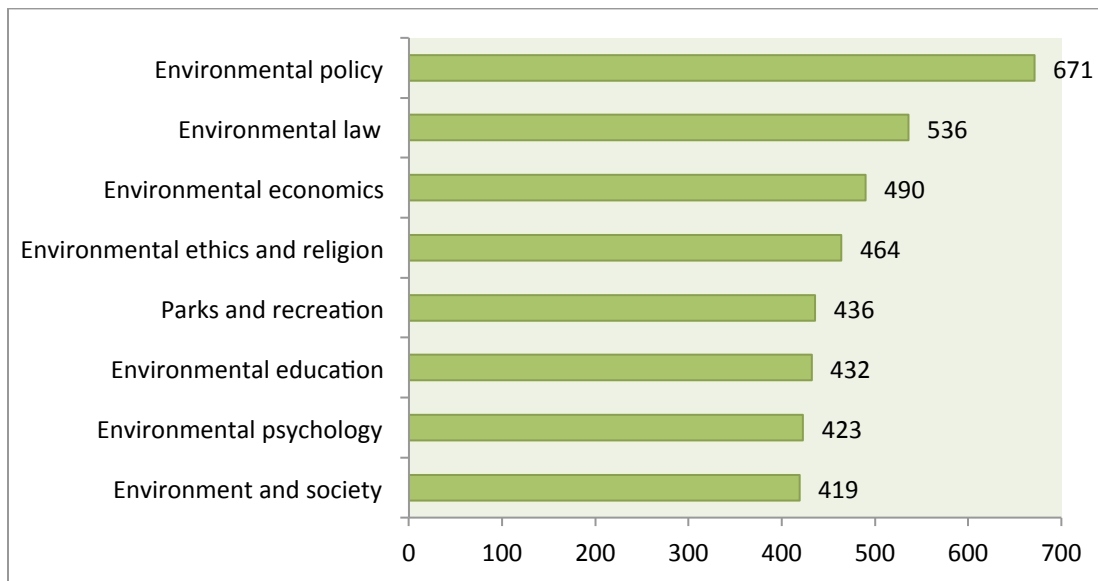


Figure 14. Total number of students interested in environmental social science courses (n=1273)

**Reasons for Choosing a Major/Career.** Table 5 (University-wide sample) and Table 6 (CFAES sample) illustrate how students responded when asked to indicate the reasons they may have for choosing a major/career. Overall, respondents indicate that majors/careers involving a lot of math and science are least preferred, and the five most influential reasons for their choice are personal interest, opportunity to make a positive difference, high likelihood of obtaining a job, potential for high salary, and a high level of prestige, respectively. Both the samples depict respondents choosing their majors/careers primarily based on personal choice. As is apparent in the data, respondents are also motivated to make a positive difference in society. However, it seems that respondents are more concerned about finding any job than specifically finding a high paying job.

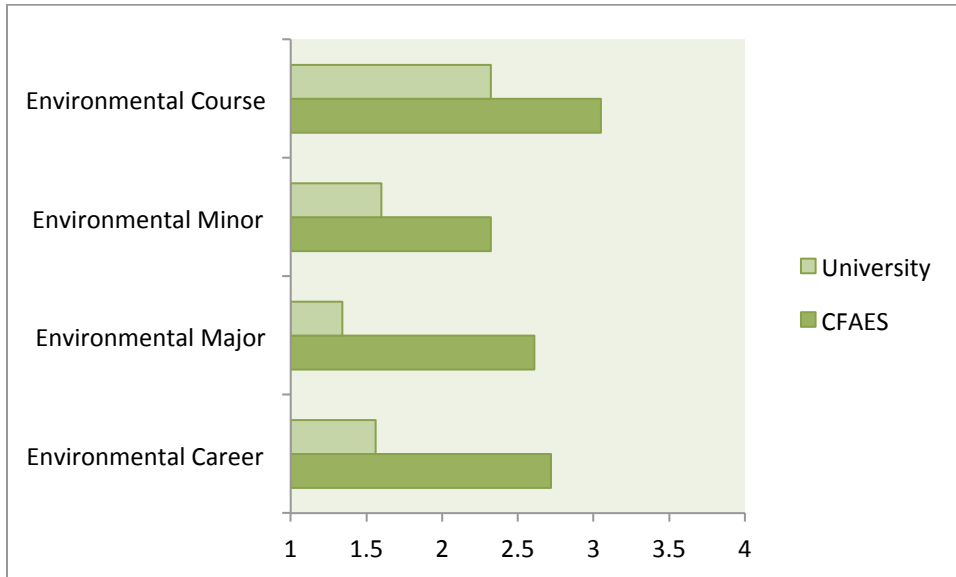
**Table 5.** List of reasons for choosing a major/career by percentage of total responses (University-wide respondents). Note: “Does not influence” is abbreviated here as “DNI”.

	Decreases likelihood				Increases likelihood			n
	Greatly	Modera tely	Slightly	DNI	Slightly	Modera tely	Greatly	
High likelihood of obtaining a job	1.8%	1.1%	1.1%	8.9%	20.7%	30.6%	35.9%	836
Potential for high salary	1.3	1.6	1.0	16.0	24.4	28.4	27.3	837
High level of prestige	.8	1.7	1.8	26.8	32.1	22.7	14.2	835
Personal interest	3.1	.1	1.4	3.6	5.8	14.2	71.8	834
Family Expectations	2.8	1.3	3.6	46.9	28.0	10.7	6.7	834
Lots of math involved/required	15.4	14.1	16.9	25.4	14.3	8.7	5.3	834
Lots of science involved/required	7.8	10.1	15.4	26.6	17.9	13.4	8.8	833
Opportunity to work with people	1.3	2.0	4.1	18.2	24.1	27.8	22.5	832
Opportunity to make positive difference	1.4	1.1	.7	5.7	11.0	27.3	52.8	833
Answered Questions								832
Skipped Questions								132

**Table 6.** List of reasons for choosing a major/career by percentage of total responses (CFAES respondents). Note: “Does not influence” is abbreviated here as “DNI”.

	Decreases likelihood				Increases likelihood			n
	Greatly	Modera tely	Slightly	DNI	Slightly	Modera tely	Greatly	
High likelihood of obtaining a job	.7%	1.8%	.7%	8.1%	19.7%	36.6%	32.4%	284
Potential for high salary	1.4	1.8	1.1	17.3	26.5	31.1	20.8	283
High level of prestige	1.4	1.8	1.8	32.4	31.3	23.8	7.5	281
Personal interest	2.1	.7	.4	1.1	2.8	12.4	80.6	283
Family Expectations	3.9	1.8	2.5	47.3	29.5	10.5	5.0	281
Lots of math involved/required	15.2	7.4	24.0	30.4	13.8	7.4	1.8	283
Lots of science involved/required	4.3	5.3	14.6	26.0	24.9	22.1	2.8	281
Opportunity to work with people	1.8	1.1	4.3	20.9	26.6	25.5	19.9	282
Opportunity to make positive difference	1.7	1.0	.7	5.9	13.4	28.2	49.2	282
Answered Questions								284
Skipped Questions								22

**Likelihood of Pursuing an Environmental Course, Minor, Major or Career.** Figure 15 illustrates the likelihood of respondents taking an environmental course on campus as well as pursuing an environmentally focused program of study or career. Respondents were asked to rate each option on a scale from 1 = not likely to 4 = very likely. Overall, respondents were more likely to take environmental courses than pursue environmental programs of study or careers. But respondents who were not necessarily majoring in an environmental field often did see the potential to pursue an environmental career.



**Figure 15.** Average response of likelihood of pursuing an environmental course, minor, major and career from 1 (not likely) to 4 (very likely).

## Demographics

**Community of Origin.** Most of the University-wide respondents were raised in urban areas, with 55.9% of respondents reporting being raised in a large city or suburb. Of the remaining respondents, 27.8% reported being raised in a small town or a large city, 10.6% reported being raised in a farming or agricultural based area, and 5.7% reported being raised in a non-agricultural rural area. The CFAES respondents were more evenly split among communities in which they were raised. About one third of CFAES respondents reported being raised in a large city or suburb, another third reported being raised in farming or agriculturally based areas, and the remaining third reported being raised in small towns, large cities, or non-agriculturally based rural areas. The number of respondents raised in farming or agriculturally based areas was considerably higher in CFAES than in the University as a whole.

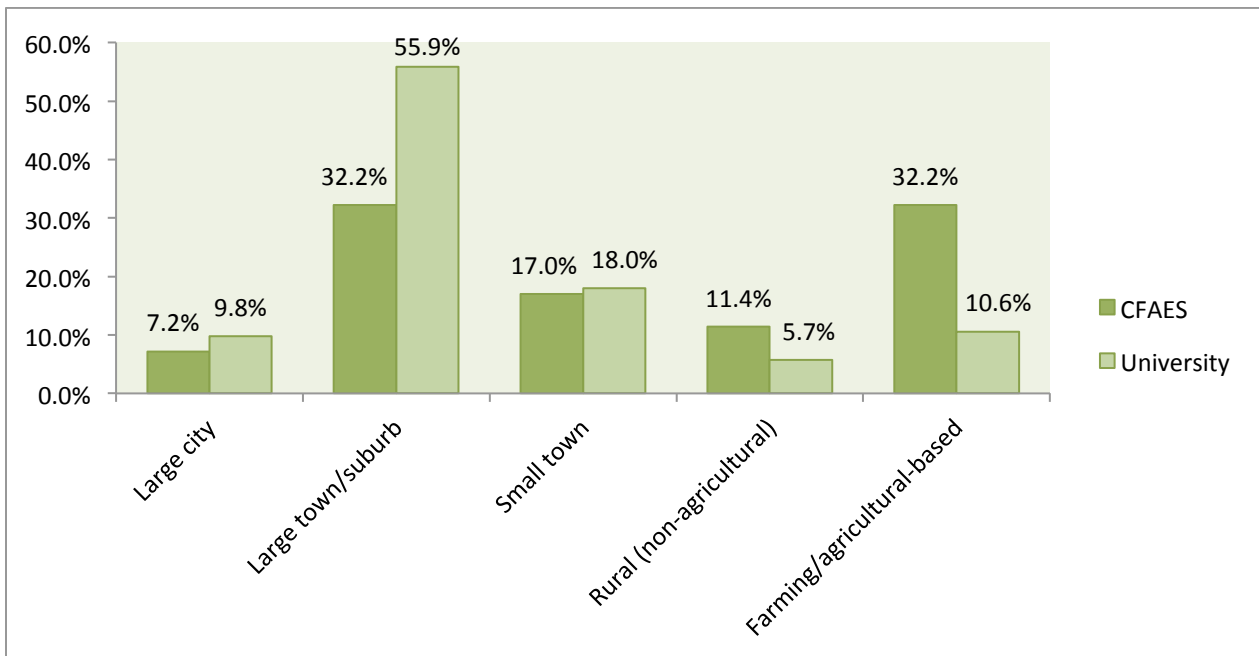


Figure 16. Percentage of respondents indicating being raised in each community type.

**Social Identification.** The survey asked respondents the extent to which they identified with different social groups on a scale from zero (do not identify with) to three (strongly identify with) (Tables 7 and 8). More CFAES respondents identified themselves as environmentalists than respondents in the University-wide sample (perhaps due to the larger number of SENR students in the CFAES sample). In addition, more CFAES respondents than University-wide respondents identified themselves as farmers, anglers, and hunters. However, respondents in the University-wide sample were more likely than CFAES respondents to identify themselves as liberal.

**Table 7. Social groups respondents identified with by percentage of total respondents (University-wide sample)**

Response Item <sup>a</sup>	Do NOT identify	Slightly identify	Moderately identify	Strongly identify	Mean	N
Conservative	44.9%	25.8%	18.7%	10.6%	0.95	818
Liberal	25.2	23.4	27.7	23.7	1.50	815
Hunter	87.5	7.7	3.3	1.5	0.19	810
Angler	86.0	9.0	3.0	2.0	0.21	802
Farmer/Rancher	80.6	12.2	4.2	3.0	0.30	809
Environmentalist	34.3	36.1	20.2	9.4	1.05	811

<sup>a</sup> Items were coded: Do NOT identify = 0, Slightly = 1, Moderately = 2, Strongly = 3.

**Table 8. Social groups respondents identified with by percentage of total respondents (CFAES sample)**

Response Item <sup>a</sup>	Do NOT identify	Slightly identify	Moderately identify	Strongly identify	Mean	N
Conservative	33.6%	31.3%	16.4%	18.8%	1.20	256
Liberal	33.9	23.0	27.6	15.6	1.25	257
Hunter	58.0	16.9	10.6	14.5	0.82	255
Angler	56.1	20.6	14.2	9.1	0.76	253
Farmer/Rancher	37.6	21.3	14.3	26.7	1.30	258
Environmentalist	18.9	31.7	27.0	22.4	1.53	259

<sup>a</sup> Items were coded: Do NOT identify = 0, Slightly = 1, Moderately = 2, Strongly = 3.

**Race and Ethnicity.** Almost 90% of the University-wide respondents reported being white or Caucasian, with the remaining 10% split between Asian, African American, Native American, or other. 2.2% of University-wide respondents considered themselves Hispanic or Latino. Among CFAES respondents, 92% reported being white or Caucasian, with the remaining 8% split between Asian, African American, Native American, or other. 1.5% of CFAES respondents considered themselves Hispanic or Latino.

**Gender.** In both the University-wide and CFAES samples, about one third of the respondents were male and about two thirds of the respondents were female (n=825).

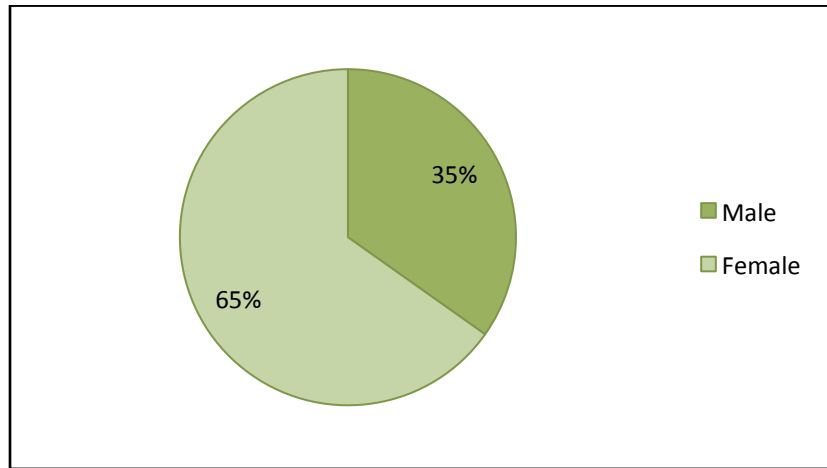


Figure 17. Gender (University-wide sample, n=825, skipped=144)

**Age.** Most of the respondents were between 18 and 21 years old. Some respondents under 18 were high school students enrolled in advanced placement classes at the University. About 9% of respondents were over 25 years old.

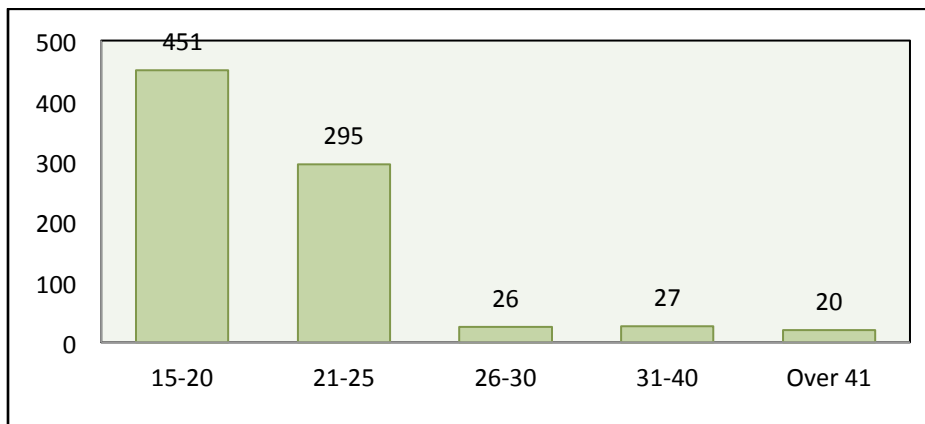


Figure 17. Age Groups in Years (University-wide sample, n=819, skipped=150)

## Appendix I Responses to Open-Ended Questions

The Ohio State University Environmental Curriculum Survey concluded with an open ended question asking for additional responses. While such questions are generally for the benefit of those taking the survey—to express opinions about the survey itself or to voice a concern or comment not covered by the survey—line by line coding of the responses by university students and students in the College of Food, Agriculture, and Environmental Sciences (FAES) revealed three relevant categories with corresponding topics.

Comments related to the environment:

- Perceptions of the Environment
- Attitudes Toward the Environment
- Environmental Behavior
- Global Climate Change

Comments related to course offerings and required courses:

- New Course Offerings
- FAES
- Required Courses

General Survey Comments

- Social Identification

**Students, OSU, and the Environment.** Pertinent to this report, students commented on their own environmental attitudes, perceptions, behaviors, and beliefs about climate change.

Perceptions of the environment ranged from the importance of the environment for jobs, to the environment as a place of educational opportunities and the source of education as well as its relationship to society and its economic roles. It should be noted that many comments focused on what the environment could teach humans, a values-based perception.

Attitude comments included feelings of hopelessness, urgency towards human survival, moderation, and needing to care.

Behavior comments included both personal choices made to be environmentally friendly such as purchasing

a Prius to changing eating habits, as well as what the Ohio State University should implement to behave in an environmentally friendly manner. These recommendations include composting, reducing the campus' carbon footprint, and not blindly following green trends. The behavioral comments also touched on what companies should do to be accountable to their own pollution.

Comments on global climate change reflect a wide array of opinions, but also indicate a frustration with the politics, scare tactics, and pushiness of the climate change debate.

**Adjusting Environmental Course Offerings.** Students also had a surprising amount to say regarding new courses as well as courses required by their college that prevented them from taking classes related to environmental social sciences and biophysical or natural sciences. Many students would like to take general courses in the environment. Some specific recommendations were for:

- Freshman seminars on the environment
- Service learning opportunities
- Agro-ecology courses
- Sustainable gardening, permaculture, and agriculture courses
- Herpetology
- Environmental economics

In order to make environmentally based courses more accessible and relevant, students recommended:

- Promoting events and courses on main campus to increase the knowledge and awareness of them
- Requiring an environmental or agricultural course (especially because OSU is a land grant institution)
- Offering courses in the evening and/or move them to main campus for more flexibility
- Decreasing the frustration of not being able to take environmental courses by allowing such courses to count towards toward their major/minor. In other words, tailoring major

and minor courses in the arts and sciences to include general environmental education related to specific topics. A concern that was also reflected in the high environmental concern of students in majors like the humanities, who also reported low likelihood of pursuing an environmental course (perhaps due to these constraints).

- SENR students would like more experiential, practical, and job based courses in environment and natural resources.



## Appendix II Major of Respondents and Associated Response Rate in the University Wide Sample

No	Major	Response	
		%	n
1	Psychology	6.8	55
2	Biology	5.0	41
3	Undecided	4.9	40
4	Business Administration	3.8	31
5	Nursing	3.7	30
6	Mechanical Engineering	3.3	27
7	Political Science	3.2	26
8	English	2.9	24
9	International Studies	2.6	21
10	Human Development and Family Science	2.5	20
11	Accounting	2.1	17
12	History	2.1	17
13	Social Work	2.0	16
14	Chemistry	1.8	15
15	Communication	1.7	14
16	Industrial and Systems Engineering	1.7	14
17	Microbiology	1.6	13
18	Zoology	1.6	13
19	Marketing	1.5	12
20	Sociology	1.5	12
21	Chemical Engineering	1.4	11
22	Civil Engineering	1.4	11
23	Economics	1.4	11
24	Finance	1.4	11
25	Pharmaceutical Sciences	1.2	10
26	Geography	1.1	9
27	Health Sciences Program	1.1	9
28	Spanish	1.1	9
29	Architecture	1.0	8
30	Computer Science and Engineering	1.0	8
31	Molecular Genetics	1.0	8
32	Anthropology	0.9	7
33	Art	0.9	7
34	Electrical and Computer Engineering	0.9	7
35	Radiologic Sciences and Therapy	0.9	7

No	Major	Response	
		%	n
36	Actuarial Science	0.7	6
37	Environmental Engineering	0.7	6
38	Environmental Policy and Management	0.7	6
39	Environmental Science	0.7	6
40	Exercise Science Education	0.7	6
41	Mathematics	0.7	6
42	Medical Dietetics	0.7	6
43	Nutrition	0.7	6
44	Arabic	0.6	5
45	Athletic Training	0.6	5
46	Biochemistry	0.6	5
47	Human Nutrition	0.6	5
48	International Business Administration	0.6	5
49	Journalism	0.6	5
50	Logistics Management	0.6	5
51	Materials Science and Engineering	0.6	5
52	Animal Sciences	0.5	4
53	Computer and Information Science	0.5	4
54	Dietetics	0.5	4
55	Food, Agricultural and Biological Engineering	0.5	4
56	French	0.5	4
57	History of Art	0.5	4
58	Linguistics	0.5	4
59	Music Education	0.5	4
60	Music Performance—Orchestral Instruments	0.5	4
61	Speech and Hearing Science	0.5	4
62	Sport and Leisure Studies	0.5	4
63	Comparative Studies	0.4	3
64	Criminology and Criminal Justice Studies	0.4	3
65	Dance	0.4	3
66	Engineering Physics	0.4	3
67	Evolution and Ecology	0.4	3
68	Exploration	0.4	3
69	Fashion and Retail Studies	0.4	3
70	Geological Science	0.4	3
71	Industrial Design	0.4	3

No	Major	Response	
		%	n
72	Interior Design	0.4	3
73	Medical Technology	0.4	3
74	Middle Childhood Education (pre-licensure)	0.4	3
75	Physics	0.4	3
76	Russian	0.4	3
77	Welding Engineering	0.4	3
78	Aeronautical Engineering	0.2	2
79	Agricultural and Extension Education	0.2	2
80	Astronomy	0.2	2
81	Biomedical Engineering	0.2	2
82	Dental Hygiene	0.2	2
83	Family and Consumer Sciences Education	0.2	2
84	Forestry, Fisheries, and Wildlife	0.2	2
85	Health Information Management and Systems	0.2	2
86	Hospitality Management	0.2	2
87	Human Resources	0.2	2
88	Landscape Architecture	0.2	2
89	Music Performance—Voice	0.2	2
90	Special Education	0.2	2
91	Visual Communication Design	0.2	2
92	African American and African Studies	0.1	1
93	Agricultural Communication	0.1	1
94	Chinese	0.1	1
95	City and Regional Planning	0.1	1
96	Crop Science	0.1	1
97	Food Business Management	0.1	1
98	Hebrew	0.1	1
99	Information Systems	0.1	1
100	Japanese	0.1	1
101	Operations Management	0.1	1
102	Parks, Recreation, and Tourism	0.1	1
103	Philosophy	0.1	1
104	Portuguese	0.1	1
105	Respiratory Therapy	0.1	1
106	Risk Management and Insurance	0.1	1
107	Technical Education and Training	0.1	1
108	Theatre	0.1	1
109	Women's Studies	0.1	1
Answered question			814
Skipped question			155

## Appendix III Major/Minor of Respondents and Associated Response Rate in the CFAES Sample

No.	Major	Response	
		%	n
1	Animal Science	28.4	75
2	Environmental Policy and Management	10.2	27
3	Environmental science	8.7	23
4	Food, Agricultural, and Biological Engineering	4.9	13
5	Food Science	4.9	13
6	Parks Recreation and Tourism	4.9	13
7	Forestry Fisheries & Wildlife	4.5	12
8	Agribusiness and Applied Economics	3.4	9
9	Construction Systems Management	3.0	8
10	Agribusiness	2.7	7
11	Agricultural Education	2.7	7
12	Crop Science	2.3	6
13	Landscape Horticulture	2.3	6
14	Agricultural Communications	1.9	5
15	Fisheries and Wildlife Science	1.9	5
16	Biological Engineering	1.5	4
17	Forestry	1.5	4
18	Construction Management	1.1	3
19	Food Science & Technology	1.1	3
20	Turfgrass Science	1.1	3
21	Agricultural Engineering	0.8	2
22	Food Business Management	0.8	2
23	Agricultural System Management & Animal Sciences	0.4	1
24	Agriculture and Extension Education	0.4	1
25	Agriculture Communications and Ag Business	0.4	1
26	Ecological Engineering	0.4	1
27	Environmental Education	0.4	1
28	Extension Education	0.4	1
29	Fisheries and Wildlife Management	0.4	1
30	H&CS	0.4	1
31	Laboratory Technology	0.4	1
32	Plant Pathology	0.4	1
33	Soil-Environmental Science	0.4	1
34	Veterinary / Animal Sciences	0.4	1
35	Wildlife and Fisheries Management	0.4	1
36	Wildlife Management	0.4	1
Answered question			264
Skipped question			42

No	Minor	Response	
		%	n
1	Life Science	18.7	34
2	None	8.2	15
3	N/A	7.7	14
4	Business	3.8	7
5	Production Agriculture	3.8	7
6	Agribusiness	3.3	6
7	Animal Science	3.3	6
8	Crop Science	2.7	5
9	Spanish	2.7	5
10	Sociology	2.2	4
11	Agricultural Education	1.6	3
12	Agricultural Education	1.6	3
13	City and Regional Planning	1.6	3
14	History	1.6	3
15	International Studies	1.6	3
16	Public Health	1.6	3
17	Communications	1.1	2
18	Education	1.1	2
19	English	1.1	2
20	Geography	1.1	2
21	Meat Science	1.1	2
22	Natural Resource Management	1.1	2
23	Zoology	1.1	2
24	Agri Production/ Natural Resources Management	0.5	1
25	Agribusiness and Applied Economics	0.5	1
26	Agricultural Communications	0.5	1
27	Agricultural Economics	0.5	1
28	Agricultural Systems Management	0.5	1
29	American Indian Studies	0.5	1
30	Animal Nutrition	0.5	1
31	Animal Nutrition and Soil Science	0.5	1
32	Art	0.5	1
33	Asm	0.5	1
34	Biology	0.5	1
35	Dairy	0.5	1
36	Dance	0.5	1
37	ENR	0.5	1
38	Entrepreneurship	0.5	1
	Environmental engineering &		
39	Mathematics	0.5	1
40	Equine science	0.5	1
41	Farm Management	0.5	1
42	Food Processing	0.5	1

No	Minor	Response	
		%	n
43	German	0.5	1
44	Horticulture	0.5	1
45	Human Development and Family Sciences	0.5	1
46	Human Nutrition	0.5	1
47	Industrial,interior,and visual communications design	0.5	1
48	International Development	0.5	1
49	Italian	0.5	1
50	Life Science and Farm Management	0.5	1
51	Life Science, Plant Cellular Molecular Biology	0.5	1
52	Management	0.5	1
53	Military Science	0.5	1
54	Natural science	0.5	1
55	Neuroscience, Life Science	0.5	1
56	Nutrition	0.5	1
57	Philosophy	0.5	1
58	Plant Pathology	0.5	1
59	Political Science	0.5	1
60	Pre-Vet	0.5	1
61	Production Ag./Animal Science	0.5	1
62	Professional Writing	0.5	1
63	Psychology and Life Sciences	0.5	1
64	Spanish, Life Sciences	0.5	1
65	Studio Art Photography	0.5	1
66	Studio Arts	0.5	1
67	Theatre and Leadership	0.5	1
68	Veterinary technology	0.5	1
69	Women's Studies	0.5	1
70	Zoology, Agribusiness	0.5	1
	Answered question		<b>18</b>
			<b>2</b>
	Skipped question		<b>12</b>
			<b>4</b>