

## **ENVIRONMENTAL STUDIES ASSESSMENT REPORT – 2013**

Submitted by Dan Hornbach – May 2013

### ***Introduction***

The Environmental Studies Department developed its Departmental Assessment Plan during the 2008-2009 academic year. This plan was provided to the Provost and Institutional Research department in April 2009. Based on this plan there are 4 tasks in the assessment plan that are to be undertaken each year:

1. Transcript analysis of graduates,
2. A senior survey,
3. An assessment of graduates' performance relative to the learning objectives set out by the department, and
4. Discussion of #1-3 above and planning to improve the education of our students.

Last year we indicated we would undertake 7 tasks in response to our assessment discussion. Our progress on these tasks is detailed below.

1. Will monitor the international content of our courses with the goal of introducing students to the international context of many environmental issues.
  - a. This year we were able to hire a sabbatical replacement for Chris Wells. We were successful in hiring Ryan Edgington who taught a course that emphasized international environmental history. In addition other courses (including Environmental Science, Environmental Politics and Policy, and Sustainable Development and the Global Future) attempted to increase the international components in them. Also in ENVI 225 - 100 Words for Snow: Language and Nature, Prof. Milligan will work to make the unit "Endangered environments and endangered languages" explicitly international since it's basically about the tropics.
  - b.
2. Will continue to work on developing labs in the two courses that meet the introductory Environment Science requirement (ENVI 133 or ENVI 140) that are specifically designed to allow students to develop a hypothesis and test it.
  - a. ENVI 133 introduced a computer simulation lab specifically designed to have students develop hypotheses and test these. This course also made a more deliberate attempt to have students develop hypotheses associated with a wind power lab. Prof. Bradtmiller was on sabbatical last fall and so ENVI 140 was not taught last year. She has indicated that she will be working to implement more explicit hypothesis-testing this fall in her class.

3. Will have a retreat in late summer 2012 to discuss curricular issues, especially the capstone requirement in the department.
  - a. We held the retreat and decided to require the ES Senior Seminar for all ES majors – they will no longer be able to substitute one of the Geography Senior Seminars (only majors conducting an honors project will be exempt). The main reason for this was to ensure our majors were meeting the learning outcome of working collaboratively with individuals from a range of disciplines toward addressing an environmental issue.
4. Will continue to discuss the role of economics in our curriculum.
  - a. We continue to encourage our students to take economics and have asked the two members in the Economics Department that are environmental economists to give us a longer term plan for their teaching of Introduction to Economics. They have provided that information and this should help us better advise our students.
5. Will do more to explain to students that interdisciplinarity can impart “depth” and that specialization does not necessarily equate with “depth.”
  - a. Students have a discussion about the depth/breadth issue in the Environmental Leadership Practicum. It may also be necessary to adjust our senior interview question to reflect topical depth as well as disciplinary depth.
6. Will continue to use the same assessment instruments for at least one more year so we can have comparable data for our longitudinal study. We will then review these instruments.
  - a. This report completes 5 years of using this assessment tool. As directed by the assessment office we will examine our learning goals and this assessment tool during the upcoming fall semester.
7. We will review our department’s learning outcome goals in advance of the next department review.
  - a. As mentioned above, we will accelerate this review based on the assessment office’s requirement that we do the review this year.

This year we undertook tasks 2-4 in our assessment plan. We did not conduct a transcript analysis of graduates based on a recommendation from Kendrick Brown, Associate Dean of the Faculty, that we do this every few years. We also met to discuss the curricular mapping project as a department and with Associate Dean of the Faculty Kendrick Brown. This project was designed to examine how the learning outcomes in the ES department support the larger learning goals of the College. The results of these discussions are found in Appendix A.

This year the department discussed the senior survey and outcomes rubrics (task #3) on April 30 and May 16, 2013. Based on these discussions:

1. We've begun to make a list of possible changes to our assessment tool for an update in 2014-2015.
2. We will update the senior seminar to clarify some of the questions so that seniors will better understand what information we are trying to gather.
3. We will ask seniors to indicate the division in which their emphasis lies so that we can see whether students in different areas of ES have different responses to various questions.
4. We will continue to strive to infuse more international content in our courses and move toward cross-listing more courses with the International Studies department and consider attempting to certify courses for the Internationalism General Education Requirement.
5. We are considering changing the required introductory science class for the major. Currently students must take either ENVI 133 or 140. We may instead introduce a new course, Environmental Biology and then allow students to take either ENVI 140 or the new course. We may continue ENVI 133 as a non-lab course for non-ES students to meet their science distribution requirement.
6. We will continue to bring a mix of individuals engaged with environmental issues (activists, academics, business persons, government officials, etc.) to speak in the EnviroThursday series or as guest speakers in courses to provide students with exposure to the wide range of careers available to them.
7. We have decided that the our earlier set of 6 learning objectives are still valid for our majors but they are more appropriately labeled "goals" rather than "outcomes". We will develop a new set of measureable outcomes for each of these goals and we have identified specific course where most of the outcomes can be measured. We will develop these outcomes in the fall of 2013 and begin using them in our 2014-15 assessment.

We believe that these activities will allow us to continue to improve upon our strong departmental programs.

### ***Results of 2012-2013 assessment activities***

The ES curriculum requires our students to declare an emphasis within ES in addition to fulfilling a broader set of requirements. The next section describes the distribution of emphases declared by our majors.

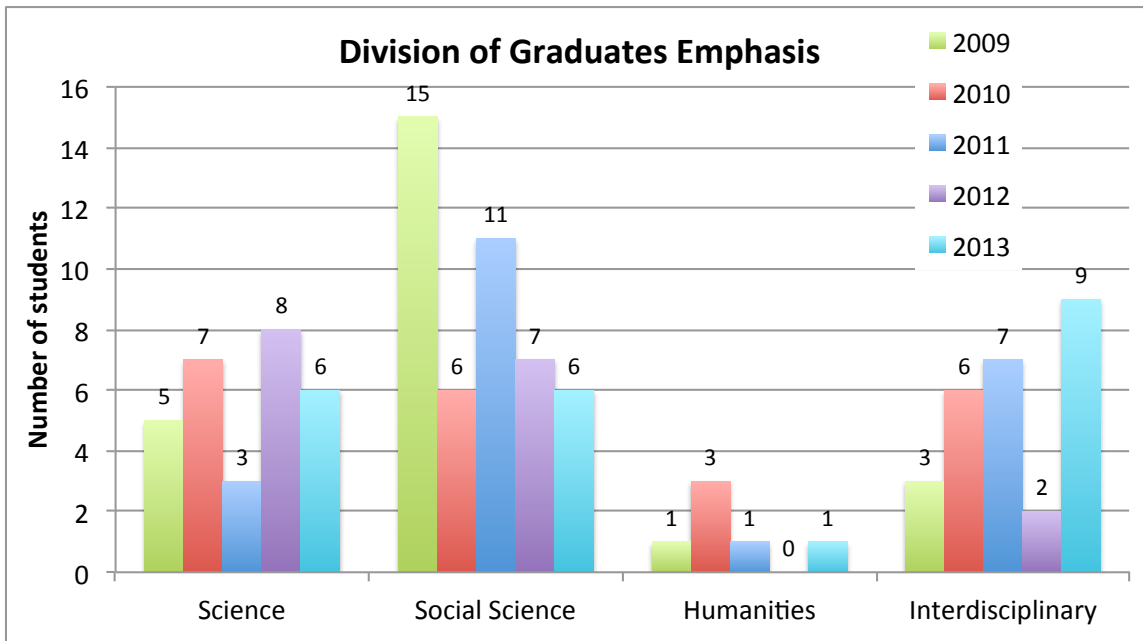


Figure 1 - Distribution of emphases among the major divisions

There were 22 graduates in the class of 2013 (one was a Dec 2012 graduate). Of the 2013 graduates 13 had disciplinary emphases and 9 had interdisciplinary emphases (Figure 1). There had been a trend of more students choosing interdisciplinary emphases until 2012 where we only had 2 students choosing an interdisciplinary emphasis. The trend of increasing numbers of interdisciplinary majors resumed in 2013. Of the 13 graduates with disciplinary emphases, 6 were in the sciences (down from 8 last year), 6 were in the social sciences (down from 7 last year) and one was in the humanities. Overall we had 11 different emphases declared by our majors compared with 9 emphases last year and 14 emphases in 2011 (Figure 2). The fewer emphases in 2012 may have been due to the lower number of graduates (17 versus 22 this year). This might be expected with the reduced number of graduates this year. In the past we had some concerns about an “imbalance” between science and social science students (2009 and 2011) but it now appears that this is just part of the natural variability in the interests of our students. We continue to be low in the number of humanities students. We are still likely feeling the loss of Karen Warren in the Philosophy Dept. and the decision not to fill her position with another environmental philosopher. The Environmental Ethics course is highly enrolled each year and having a philosopher with a scholarly agenda involving the environment could strengthen the humanities component of our major. We had hoped that with the hiring of Jamie Monson in the History Dept. and the offering of some additional courses in the English Department in environmental literature/writing the number of humanities emphases might increase. We continue to work with these and other humanities departments to enhance their offerings in environmentally related areas and to provide them on a regular basis. We also hope that in the future more departments in the Humanities Division will hire individuals with expertise in the environment.

Apparently a number of departments stress the area of sustainability in their curricular visioning documents, and if some of these departments are in the humanities their connection to sustainability through the issue of environmental justice would help to strengthen our major and potentially increase the number of graduates who declare a humanities emphasis.

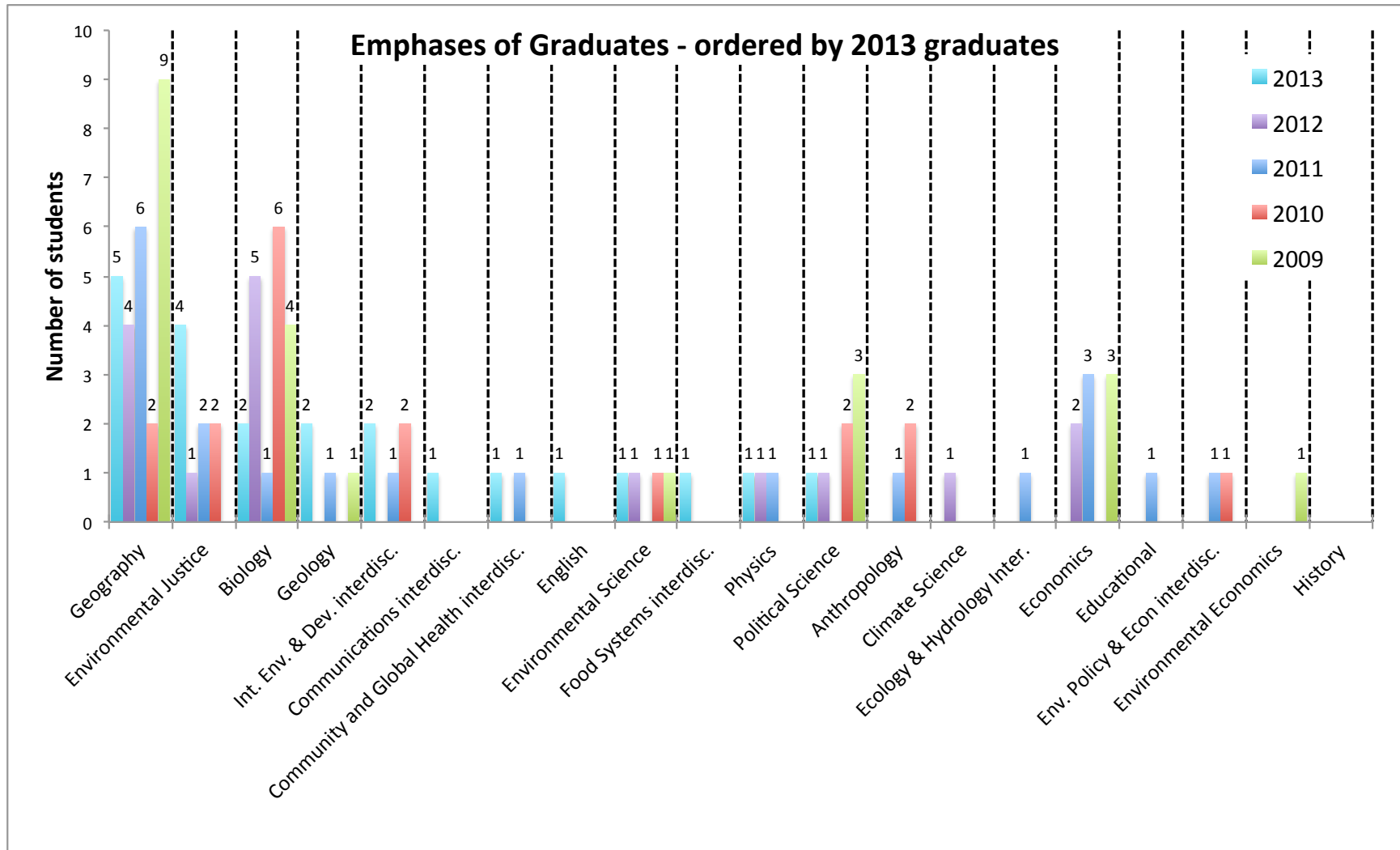


Figure 2 - Emphases declared by graduates

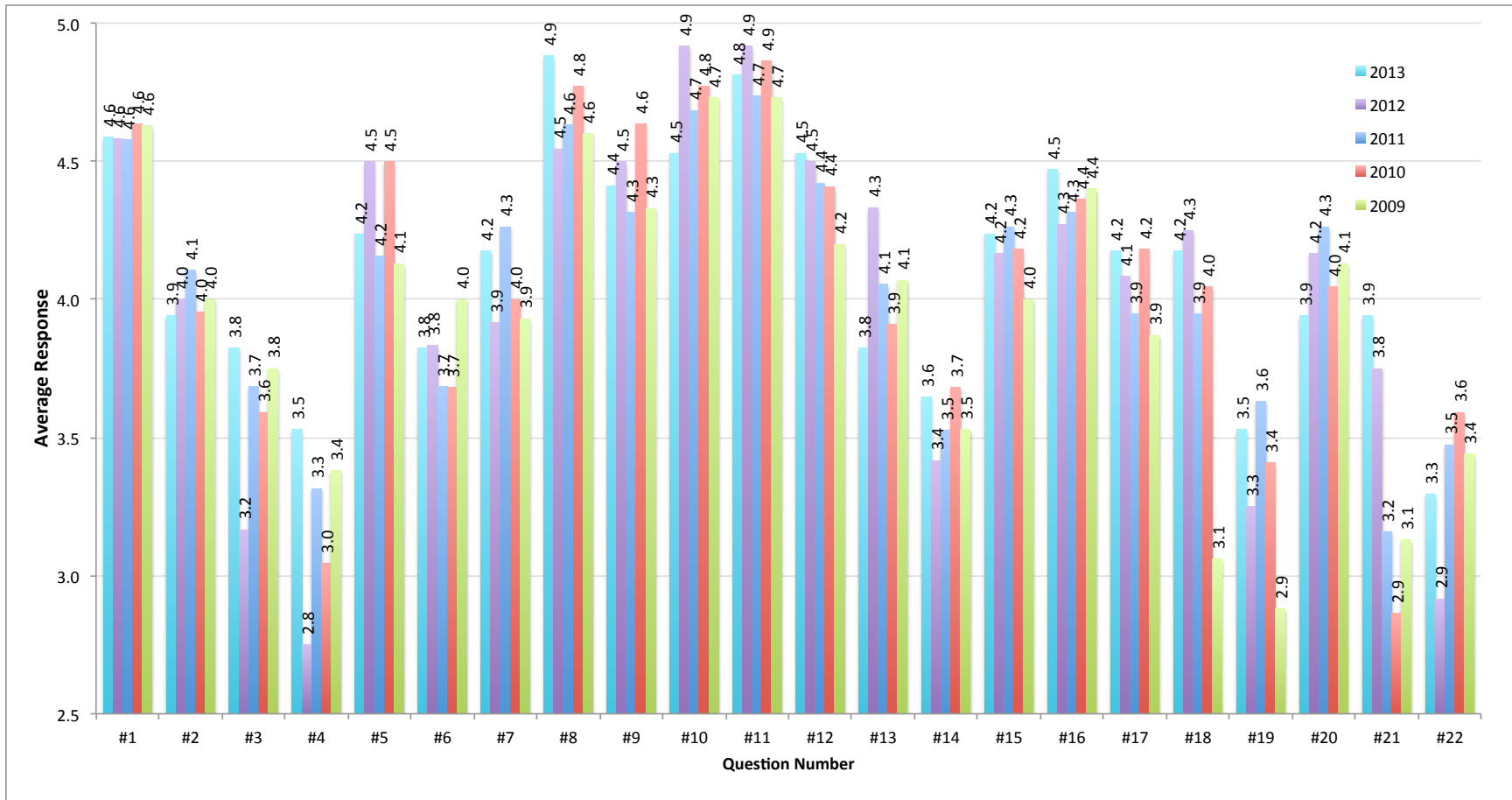


Figure 3 - Average student response to survey questions

# Summary of Responses to 2013 ES Graduates Survey

## Introduction

The senior survey was distributed to all seniors via e-mail in March and April 2013. Students were asked to complete the survey using the Google Survey tool. We had a 77% return rate compared with 75% in 2012, 86% in 2011, 100% in 2010 and 67% in 2009. At our senior dinner, a number of students mentioned “survey fatigue.” We will try to send this survey out in February of 2014 in an attempt to increase the return rate.

## Results

The survey results are presented in Appendix B. In addition to providing the 2013 student responses to the questionnaire, we will discuss these results relative to results in earlier years. Figure 3 shows the ways in which student responses to the questionnaire have changed over time.

More than half of the questions (17) in 2013 had essentially the same average ranking as 2012 (within 0.3 units on a 5.0 scale), 3 had a higher rating (#3, #4 and #22) and 2 had lower ratings (10 and 13). We were pleased that the rating of #3 (How confident are you that you could describe the major U.S. policies related to these issues?), #4 (How confident are you that you could describe the major international policies related to these issues?) and #22 (How well exposed were you to careers available to people with an academic interest in ES (masters or doctorate)?) increased since these had all decreased between 2011 and 2012.

While we recognize we should remain vigilant about the decline in ranking #10 (How confident are you that you could connect your learning in ES to other areas of study?) the ranking was still high (with 89% of students ranking this a 4 or 5). For question #13 (How confident are you that you could develop a strategic plan to identify and implement local solutions to an environmental problem?) we are more concerned since 30% of our students ranked this a 2 or 3.

Questions 4, 14 and 22 have had consistently relatively low rankings. The response to Question 4 (How confident are you that you could describe the major international policies related to these issues?) continues to concern us. We noted in our last few reports that students’ confidence in understanding international environmental polices (question #4) had been low (<3.5). This year our score was slightly higher and we hope this may note the beginning of a trend. We were fortunate to hire a sabbatical replacement for Chris Wells who had international expertise. These courses may have helped with this issue although we expect that other efforts may have also helped. The question may be narrowly worded, so that students focus on the policies rather than their confidence in describing



international issues. In the future, it may be important to cross-list more classes with the International Studies department, or certify them for the Internationalism GER, to diversify the academic background of students in ES courses.

We were concerned about the low student rankings of Question #14, and an apparent lack of confidence that they could design an empirical study that tests or explores a basic scientific question important to environmental problem solving. As mentioned in the past assessment reports we have tried to introduce some labs in ENVI 133 and 140 that would allow students to design an experiment and make them more specific to hypothesis testing and we will continue to make changes to these labs and monitor this issue since this issue has not yet been resolved. A number of students in their comments about which courses should be dropped from the ES curriculum pointed to Environmental Science (ENVI 133). They suggested that this course was too broad and suggested a series of more focused courses where students could learn more about specific areas of science in more depth. While a broad Environmental Science course is typical of most ES programs, and we offer a more focused course (The Earth's Climate System – ENVI 140) that counts for the introductory science course, we will consider the suggestions made by the graduates. We may consider allowing other more specific intro science courses count for the major and then offering Environmental Science without a lab, and simply requiring that students take one environmentally-related science course with a lab. We also discussed that 133 is not required and students could have taken ENVI 140. We all agreed that some of the concerns raised may be just be the presence of a few unhappy students and since this has not been raised before we don't want to respond too rashly.

Question 22 (How well exposed were you to careers available to people with an academic interest in ES (masters or doctorate?)) continues to have low rankings. We have tried to find a better balance of individuals who present in our EnviroThursday program, but it appears we still haven't found the appropriate balance between practitioners and academics. Our student representatives to the ES department were somewhat baffled by the response to this one given what we've done through EnviroThursday presentations and the Practicum. Maybe our progress has not yet trickled down to all students.

We also asked students a series of open-ended questions:

23. What course(s) do you think the department should require all ES majors to take and why?

There was a range of suggestions from our graduates. A number basically indicated the current range of courses was good and a good number specifically mentioned the usefulness of Environmental Classics. Other areas that seemed to have some support were an economics course. Since our major is quite large in terms of the number of courses, adding courses would require us to drop other required courses. We do not anticipate such a change at this time.

24. What currently offered course(s) do you WISH you had taken while majoring in ES and why?

Again, there were a large number of courses listed that students wished they could have taken. We consider this a good problem to have. Of particular interest were the Psychology of Sustainability and Imperial Nature. We might consider asking the Provost to support a second section of the Psychology of Sustainability in the future.

25. What course(s) do you think are missing from our curriculum that you would like to see offered in the future and why?

Students wish we had a broader range of environmental science courses, and more climate change courses. Also courses related to food and agriculture (which we were fortunate to have this year with our visitor) were of interest.

26. What course(s) do you think should be dropped as required for the ES major and why?

As mentioned above, there were a number of students who felt the Environmental Science course, as currently configured, should not be required. In fact ENVI 133 is not required and students have the option of ENVI 140. We also now see a lot of students coming in with AP Environmental Science and they are not required to take either ENVI 133 or ENVI 140. They just need to take two environmentally-related science courses from our approved list. So this may become less of an issue in the future.

A couple of students indicated they thought the leadership seminar should not be required, but we've had such positive comments from most students that we plan to continue requiring this course. In addition, this course tends to be one that students do not fully appreciate until after they graduate. When ES alumni are asked, they speak highly of this course.

27. Do you have any additional comments you would like to share?

There were a number of interesting individual comments that we have discussed. As in the past a couple of students noted the lack of "community" in the ES Department. We have tried to find some opportunities to improve this and will continue in the future.

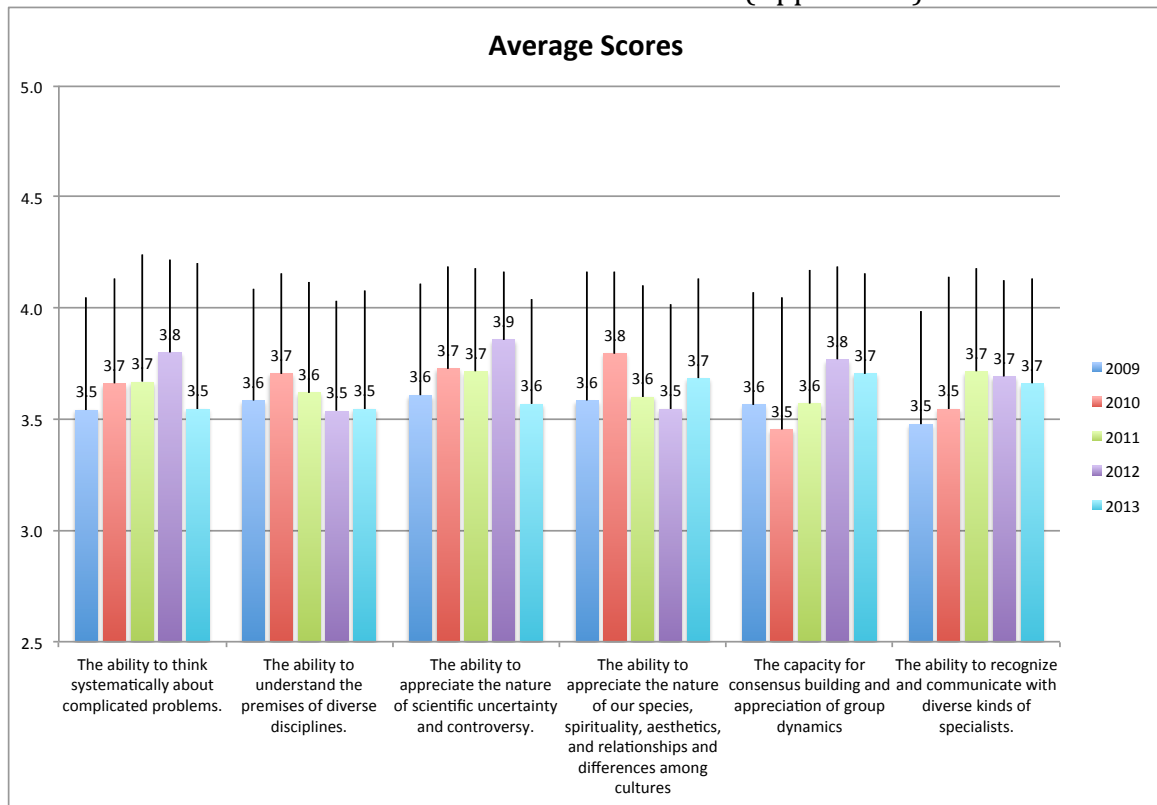
## Environmental Studies Senior Outcomes Summary - 2013

### Introduction

As part of the Environmental Studies Department annual assessment program, we used the outcomes assessment found below to measure the progress our majors made during the course of their education at Macalester. As part of our Assessment Plan development, we decided to have each student's adviser initially fill out the outcomes assessment form, and then we had all faculty in the department meet to discuss these forms.

### Results

Figure 1 shows the results of our ranking of students' mastery of outcomes based on the rubrics detailed in the outcomes assessment form (Appendix C).



**Figure 4 -Senior Outcomes Assessment – Comparing 2009, 2010, 2011, 2012 and 2013. Bars are one standard deviation.**

On the whole the ES Department was quite pleased with the mastery of our graduates. We found the average mastery to be quite high in all areas. We found ourselves being somewhat conservative in rating students at the highest level of mastery, retaining that rating for the more exceptional students. For most outcomes our 2013 ratings were consistent with earlier ratings. Analyses of variance show that there were no significant differences among years in the outcomes. The last 3

years do show a rise for two of our outcomes, The Capacity for Consensus Building and Appreciation of Group Dynamics and The Ability to Recognize and Communicate with Diverse Kinds of Specialists. There has been considerable work put into the Environmental Studies Practicum/Leadership Seminar and the Senior Seminar and we believe these may be responsible for the improvements in these areas.

We discussed the results of this assessment and our ability to accurately score our students in these areas. The department came to a consensus that these categories should be retained for assessing our students in the future, but that these are more “goals” rather than “outcomes.” During the fall semester the department will develop a series of more specific outcomes based on these goals and develop rubrics to score these outcomes. Once this is completed we will have these outcomes assessed in a different fashion than we have in the past (i.e. all assessments completed by the faculty advisor). Instead goals 1 and 2 (The Ability to Think Systematically ... and The Ability to Understand the Premises ..) will continue to be assessed by advisors, while Goal 3 (The Ability to Appreciate the Nature of Scientific ...) will be assessed by faculty teaching the introductory environmental science and the Science and Citizenship courses, Goal 4 (The Ability to Appreciate the Nature of Our Species ...) will be assessed in the Environmental Classics course, Goal 5 (The Capacity for Consensus Building ...) will be assessed in the Senior Seminar, and Goal 6 (The Ability to Recognize and Communicate ...) will be assessed in the Environmental Leadership Practicum and Seminar. Hopefully this change will allow us to better assess the actual outcomes of our students.

## Appendix A – Comparing Environmental Studies learning outcomes with College Learning Goals.

### Environmental Studies Department: Summary of 6 Learning Outcomes

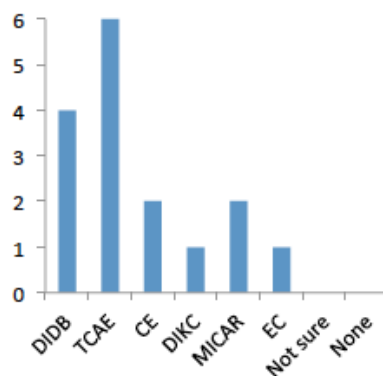
- ...think systematically about complicated problems.
- ...recognize and communicate with diverse kinds of specialists.
- ...understand the premises of diverse disciplines.
- ...appreciate the nature of scientific uncertainty and controversy.
- ...capable of consensus building and appreciate group dynamics.
- ...appreciate the nature of our species, spirituality, aesthetics, and relationships and differences among cultures.

#### Environmental Studies Department Outcomes Map Survey Results:

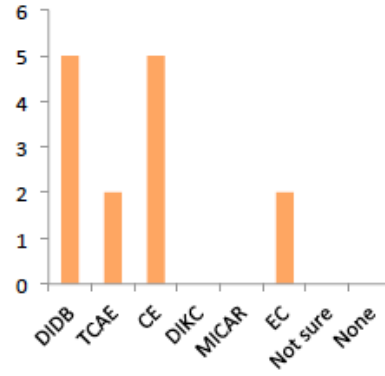
##### Outcomes 1 and 2

(N = 6 of 6 continuing faculty responded)

**Outcome 1:**  
...think systematically about complicated problems.



**Outcome 2:**  
...recognize and communicate with diverse kinds of specialists.



DDB = Demonstrate Intellectual Depth and Breadth  
TCAE = Think Critically and Analyze Effectively  
CE = Communicate Effectively

DIKC = Demonstrate Intercultural Knowledge and Competence  
MICAR = Make Informed Choices and Accept Responsibility  
EC = Engage Community

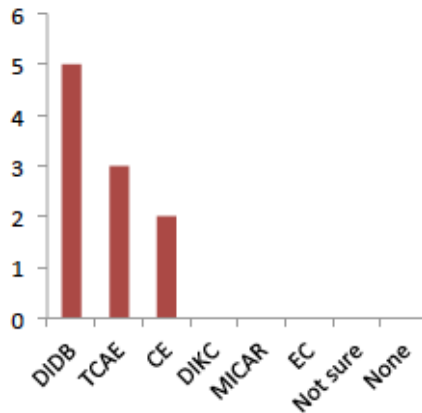
### Environmental Studies Department Outcomes Map Survey Results:

#### Outcomes 3 and 4

(N = 6 of 6 continuing faculty responded)

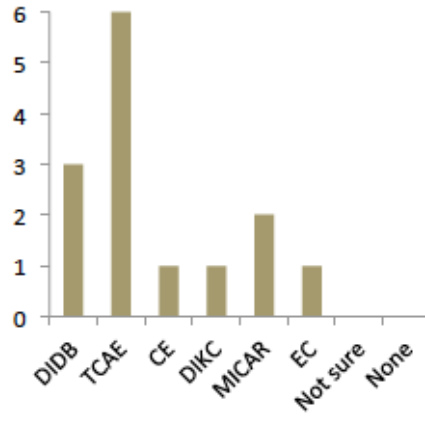
##### Outcome 3:

...understand the premises of diverse disciplines.



##### Outcome 4:

...appreciate the nature of scientific uncertainty and controversy.



DIDB = Demonstrate Intellectual Depth and Breadth  
TCAE = Think Critically and Analyze Effectively  
CE = Communicate Effectively

DIKC = Demonstrate Intercultural Knowledge and Competence  
MICAR = Make Informed Choices and Accept Responsibility  
EC = Engage Community

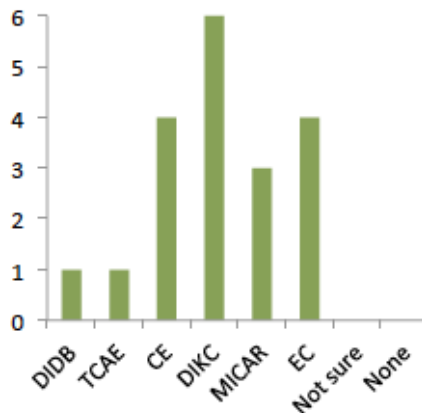
### Environmental Studies Department Outcomes Map Survey Results:

#### Outcomes 5 and 6

(N = 6 of 6 continuing faculty responded)

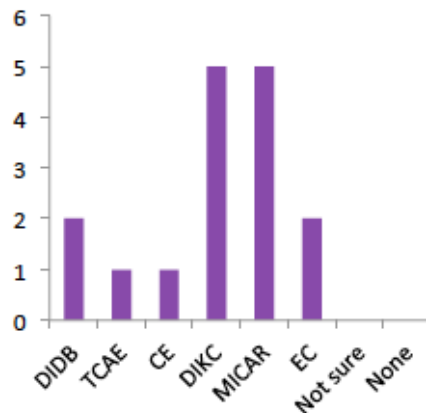
##### Outcome 5:

...capable of consensus building and appreciate group dynamics.



##### Outcome 6:

...appreciate the nature of our species, spirituality, aesthetics, and relationships and differences among cultures.



DIDB = Demonstrate Intellectual Depth and Breadth  
TCAE = Think Critically and Analyze Effectively  
CE = Communicate Effectively

DIKC = Demonstrate Intercultural Knowledge and Competence  
MICAR = Make Informed Choices and Accept Responsibility  
EC = Engage Community

**Environmental Studies Department Outcomes Map Survey Results:  
Comments**

(*N* = 6 of 6 continuing faculty responded)

- Though the ES student learning outcomes don't map perfectly onto the SSL goals, I think that the intention and spirit behind the learning outcomes do, in fact, cover the SSL goals quite well. This may be a difference in scope or level of analysis. I think individual course learning objectives likely map onto the SSL goals more directly. Some of the ES learning outcomes also reflect the unique learning necessary for competence in an interdisciplinary field.



MEMORANDUM

February 23, 2013

TO: Kendrick Brown

FROM: Dan Hornbach on behalf of the Environmental Studies Department

RE: Learning Map Survey

The Environmental Studies Department, including its student representatives, met on February 19, 2013 to discuss the results of our learning map survey to examine the degree of consensus among the department members concerning the connection of the department's learning goals and outcomes (DLGO) with the College's Statement of Student Learning Goals (SSL). We utilized the materials supplied by Kendrick Brown to guide our discussion and our reflections on the questions provided by Kendrick are given below. But first it is important to state that our department has been very engaged in the assessment process for the past 5 years and has in-depth discussions about our students' achievement of our goals on a regular basis. The success of these on-going discussions in terms of our understanding of, and agreement upon a set of learning goals is exemplified by the concordance of our individual responses to the learning map survey. For all 6 of our learning goals a minimum of 5 faculty members were in agreement about how our learning outcomes mapped onto the SSL. As we began to discuss the individual levels of consensus in our responses, it was pointed out that different faculty members filled out the survey in different ways. Some faculty members chose to pick the SSL that *most* aligned with a specific DLGO, while others chose to pick as many SSL goals that they believed connected to the specific DLGO. This contributed to some of the minor lack of consensus we saw in some responses. We felt that our learning goals were explicit enough for us to see the connections between of DLGO and the SSL goals. We also felt the SSL goals were not vague, but were couched in a way that allowed for flexible interpretations. We saw this as a strength of the SSL goals.

In the document "Questions Regarding your Department student Learning Outcomes there were two questions under the heading of *scope*. We feel that our learning outcomes are focused on the essential knowledge, skills, aptitudes or perspectives that our majors should acquire by the time they graduate. We also felt we were focused on the learning outcomes. We do make sure that resources and the



future success of our majors supports these outcomes, but we keep the emphasis of our assessment efforts squarely on the DLGO.

Under the heading of *clear outcomes*, we believe our learning outcomes are clear and that there is a consensus among the faculty regarding the meaning of these outcomes. This is because we jointly developed these outcomes and we discuss them annually during our assessment retreat. Our outcome #6 (appreciate the nature of our species, spirituality, aesthetics, and relationships and differences among cultures) is one that we continue to struggle with. While we all agree this is an important outcome we have trouble imagining a way to assess this outcome, other than to ask students about whether they believe they have gained knowledge and skills in this area (which we do in our senior survey). There has been an attempt in our required Environmental Classics course, to more directly emphasize this outcome.

We had two student representatives at our discussion of the learning map survey and they believed that current students understand the learning goals of the department. We as a group believed that our learning goals are understandable by those outside our department. We did notice that in 2010 Kendrick Brown responded to our assessment plan by stating that our goals seem fairly general and made it difficult to distinguish our goals from those of any other major at Macalester. We felt that because of the interdisciplinary nature of Environmental Studies specifics are difficult to articulate. We could easily change our learning goal statements to include the word “environment.” For example we could change “... think systematically about complicated problems” to “... think systematically about complicated *environmental* problems” however this would actually be too narrow for our learning goals. Our students have to think systematically about the politics, science and aesthetics of these complicated problems, thus they extend beyond the narrow scope of the environment. Our goals are, however, connected to the department’s mission statement which is found in the College catalog. We are also careful to explain to students in the catalog why we have a variety of requirements for the major. Finally, as individuals we lay out for our students the learning goals in our classes and these reflect the overall learning goals of the major.

In the last section of the “Questions Regarding Your Department Student Learning Outcomes” there are a series of questions regarding whether our outcomes are manageable. In a word, we think the answer is yes. We currently assess all of our student outcomes as evidenced by our last 4 annual assessment reports. We do not feel that our outcomes are repetitious or could be stated in a broader way without making them so broad as to be useless in assessment. Taken as a group, our outcomes and the curriculum we have designed to facilitate our students’ mastery of these outcomes ensure that our students can operate with an interdisciplinary approach to engage with the complicated issues involved in Environmental Studies.

We are fortunate to have a department where members communicate well with one another. We developed our learning outcomes as a group and we review our

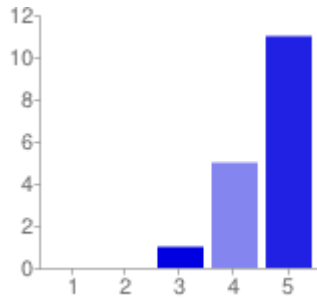
students' progress each year. We developed these learning outcomes with an eye on the mission of the College and thus our outcomes map well on the College's SSL outcomes. As one of our faculty members stated in their response on the survey, "Though the ES student learning outcomes don't map perfectly onto the SSL goals, I think that the intention and spirit behind the learning outcomes do, in fact, cover the SSL goals quite well. This may be a difference in scope or level of analysis. I think individual course learning objectives likely map onto the SSL goals more directly. Some of the ES learning outcomes also reflect the unique learning necessary for competence in an interdisciplinary field."

We would be happy to meet with you to discuss our department's response to the mapping project. We could meet with you at one of our regularly scheduled department meetings on either March 5 or April 2 at 12:15. Let us know. We'll provide lunch!

## Appendix B. Summary of Responses to 2013 ES Graduates Survey

17 responses

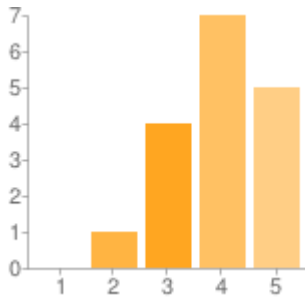
1. How confident are you that you could list the major environmental issues facing the world today?



1 - Not at All	0	0%
2	0	0%
3	1	6%
4	5	29%
5 - Very	11	65%

Not at All Very

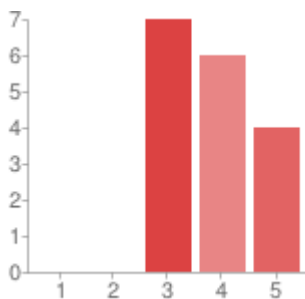
2. How confident are you that you could describe the history of how these issues arose?



1 - Not at All	0	0%
2	1	6%
3	4	24%
4	7	41%
5 - Very	5	29%

Not at All Very

3. How confident are you that you could describe the major U.S. policies related to these issues?

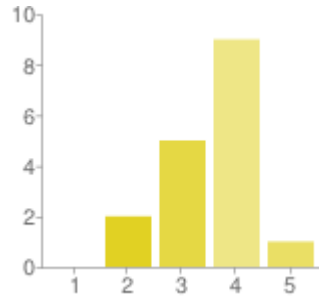


1 - Not at All	0	0%
2	0	0%
3	7	41%
4	6	35%
5 - Very	4	24%

Not at Very

All

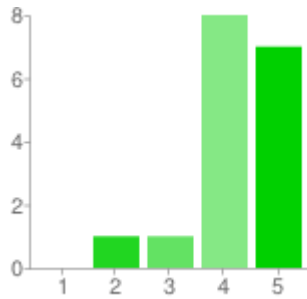
4. How confident are you that you could describe the major international policies related to these issues?



1 - Not at All	0 0%
2	2 12%
3	5 29%
4	9 53%
5 - Very	1 6%

Not at All                          Very

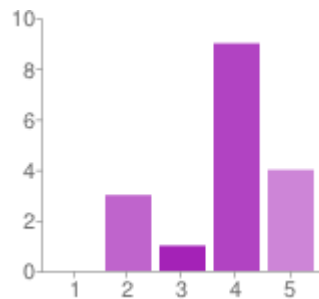
5. How confident are you that you could describe issues of social justice related to these issues?



1 - Not at All	0 0%
2	1 6%
3	1 6%
4	8 47%
5 - Very	7 41%

Not at All                          Very

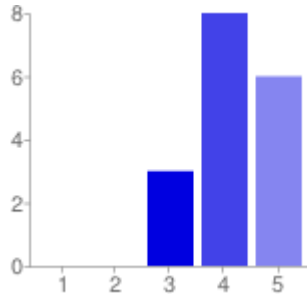
6. How confident are you that you could describe the current state of scientific evidence and major areas of scientific dispute regarding these major environmental issues?



1 - Not at All	0 0%
2	3 18%
3	1 6%
4	9 53%
5 - Very	4 24%

Not at All Very

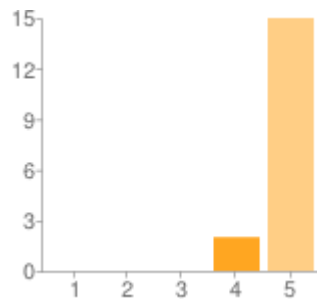
7. How confident are you that you could describe the canon of literature that defines the field of Environmental Studies?



1 - Not at All	0 0%
2	0 0%
3	3 18%
4	8 47%
5 - Very	6 35%

Not at All Very

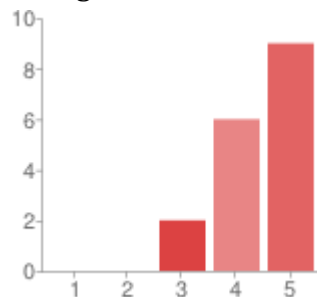
8. How confident are you that you could gather information about specific environmental issues?



1 - Not at All	0 0%
2	0 0%
3	0 0%
4	2 12%
5 - Very	15 88%

Not at All Very

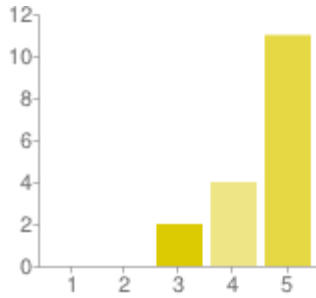
9. How confident are you that you could evaluate the quality of the information you have gathered?



1 - Not at All	0 0%
2	0 0%
3	2 12%
4	6 35%
5 - Very	9 53%

Not at All Very

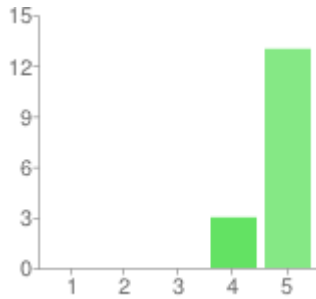
10. How confident are you that you could connect your learning in ES to other areas of study?



1 - Not at All	0	0%
2	0	0%
3	2	12%
4	4	24%
5 - Very	11	65%

Not at All Very

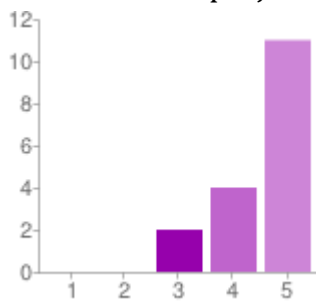
11. How confident are you that you could think in an interdisciplinary manner?



1 - Not at All	0	0%
2	0	0%
3	0	0%
4	3	19%
5 - Very	13	81%

Not at All Very

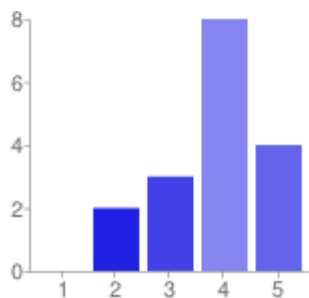
12. How confident are you that you could help a group achieve a desired outcome in a collaborative project?



1 - Not at All	0	0%
2	0	0%
3	2	12%
4	4	24%
5 - Very	11	65%

Not at All Very

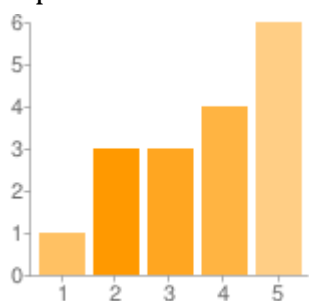
13. How confident are you that you could develop a strategic plan to identify and implement local solutions to an environmental problem?



1 - Not at All	0 0%
2	2 12%
3	3 18%
4	8 47%
5 - Very	4 24%

Not at All Very

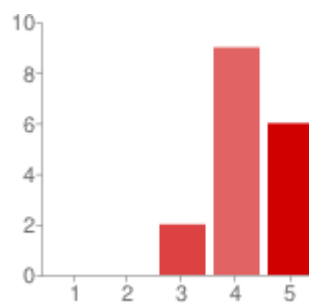
14. How confident are you that you could design an empirical study that tests or explores a basic scientific question important to environmental problem solving?



1 - Not at All	1 6%
2	3 18%
3	3 18%
4	4 24%
5 - Very	6 35%

Not at All Very

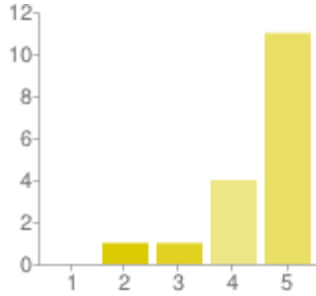
15. How confident are you that you could deliver an effective presentation at a conference?



1 - Not at All	0 0%
2	0 0%
3	2 12%
4	9 53%
5 - Very	6 35%

Not at All Very

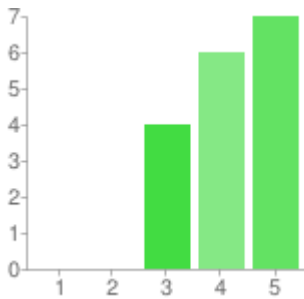
16. How confident are you that you could work effectively in an organization, government agency, or business dealing with environmental issues?



1 - Not at All	0	0%
2	1	6%
3	1	6%
4	4	24%
5 - Very	11	65%

Not at All Very

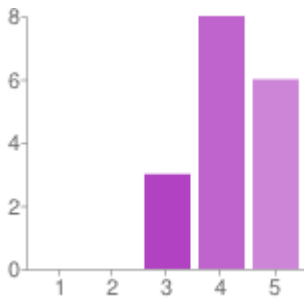
17. How confident are you that you could make a case for your acceptance to a graduate program to advance your education?



1 - Not at All	0	0%
2	0	0%
3	4	24%
4	6	35%
5 - Very	7	41%

Not at All Very

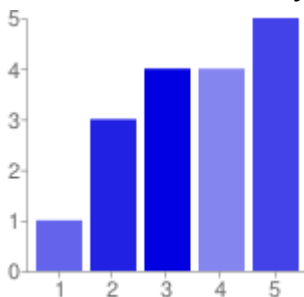
18. How satisfied are you with the breadth of your education in ES?



1 - Not at All	0	0%
2	0	0%
3	3	18%
4	8	47%
5 - Very	6	35%

Not at All Very

19. How satisfied are you with the depth of your education in ES?

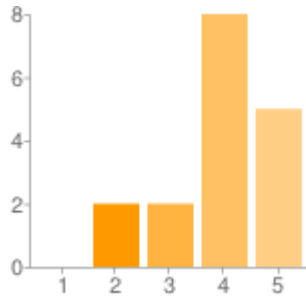


1 - Not at All	1	6%
2	3	18%
3	4	24%
4	4	24%
5 - Very	5	29%



Not at All Very

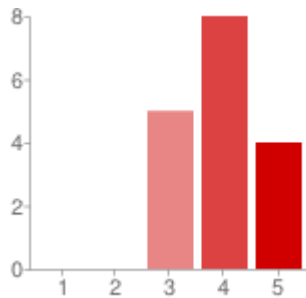
20. How well exposed were you to the different disciplines of ES (humanities, science, social science)?



1 - Not at All	0 0%
2	2 12%
3	2 12%
4	8 47%
5 - Very	5 29%

Not at All Very

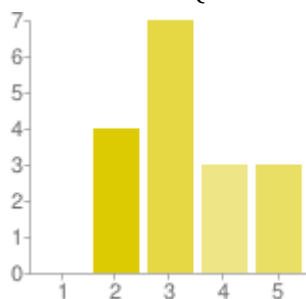
21. How well exposed were you to careers available with a professional interest in ES (NGO, government, industry or business)?



1 - Not at All	0 0%
2	0 0%
3	5 29%
4	8 47%
5 - Very	4 24%

Not at All Very

22. How well exposed were you to careers available to people with an academic interest in ES (masters or doctorate)?



1 - Not at All	0 0%
2	4 24%
3	7 41%
4	3 18%
5 - Very	3 18%

Not at All Very

Student	23. What course(s) do you think the department should require all ES majors to take and why?	24. What currently offered course(s) do you WISH you had taken while majoring in ES and why?
1		
2		
3	<p>Environmental Politics and Policy, Environmental History, Science and Citizenship, Environmental Classics, Leadership Seminar, Enviro Thursdays(??)</p> <p>I think that they give you a good breadth to find what is your passion but are not too specific that they are all still applicable for all majors. I also think that some other majors do have a min requirement for weekly seminars like Enviro Thursdays and I think that they are generally incredibly opportunities to learn something completely different and learn about what it is like to present research in such a setting.</p>	<p>Senior Seminar, 20th Century Environmental World, Food, People Agriculture and the Environment, Psychology of sustainable behavior, Imperial Nature, Outdoor Environmental Ed,</p>
4	climate science, psychology of sustainable behavior	sustainability courses
5	<p>I think that it would be useful to require all ES majors to take upper level courses from within the three disciplines. Though there are many elective upper level courses available for ES majors to take in the three disciplines, I feel like the majority of ES majors take a large number of 200 level classes and do not feel a sense of direction or accomplishment when they are at the tail end of the major.</p>	<p>I wish I would have taken Imperial Nature, because I heard it was a really good class, as well as People, Agriculture and the Environment. They just never fit with my schedule.</p>
6	<p>Sustainable Development - perhaps not for all majors...but I really enjoyed this class and how it was taught, particularly the variety of evaluation methods (practice grantwriting, presentation, papers, etc)</p> <p>American Environmental History - very well taught and a good overview of the shaping of "environmentalisms" in our specific US context</p> <p>Environmental Economics - extremely well taught, challenging, and gets you into the workings of the current political and economic structures of the US, which even for the anti-capitalism minded people is useful to understand</p> <p>Earth's Climate System - REALLY pertinent to every environmental (and really all) work, extremely well taught</p>	<p>More American studies courses, WGSS/Queer theory classes to better form my ideas about issues of justice/identity politics in the US and globally.</p> <p>More policy classes (political science, economics, or environmental)</p> <p>Stats (never thought I would say that), science, and more GIS to have a better quantitative skillset</p> <p>ethnographic interviewing - interviewing skills are important</p> <p>documentary filmmaking class</p>
7	<p>Environmental classics- its gives a great overview of the discipline, its origins and historical development, and where we are today.</p>	<p>Environmental Justice- something I always wanted to know more about these issues, it sounds like a great class. Environmental economics, was planning to take it but it was offered at the same time as my capstone class.</p> <p>Climate and Society- I ended up doing a lot of work on climate change and it would be nice to have this background.</p>
8		Rural Landscapes and Livelihoods. (Cross listed with geography)
9	Environmental justice courses (not that I have taken one)	Science of Renewable energy ENVI cross-listed PHIL course an EJ course
10	<p>I think that the department is currently doing a good job of covering most of its bases given how wide a base of knowledge there is to impart. I think that there might be better ways to blend some of the classes or concepts into hybrid classes so you could better cover the breadth of base material.</p>	<p>I wish that I had taken the Paleoclimate course because it is an extremely useful backbone to understanding the connections in natural systems which are at the heart of the interdisciplinary nature of the major.</p>
11		<p>Geology, Soil Science, Soil Ecology, Plant Physiology, Field Botany, etc. I am interested in agriculture and plant biology and wish that I had learned more concrete skills that support that interest.</p>

Student	23. What course(s) do you think the department should require all ES majors to take and why?	24. What currently offered course(s) do you WISH you had taken while majoring in ES and why?
12	<p>Ecology - I learned much more about environmental processes in this course than I did in Environmental Science. Topics that I learned in Ecology became important components in other ES courses that I ended up taking, not only in the sciences, but in social sciences and humanities as well. I felt similarly about Dynamic Earth and Global Change, but more so about Ecology.</p> <p>ELP - even though it is already required, I want to commend the ELP experience and the amount of confidence it gave me to know what to expect as I am now apply for jobs. Thank you.</p>	<p>Psychology of Sustainable Behavior - I have heard nothing but good things from students who have taken this course. I think that this class would prepare me well for life after Macalester, in terms of the interactions you will have with friends, family, and at work</p> <p>Outdoor Environmental Education - unfortunately, I was not able to fit this into my schedule, but I think the field component and service orientation of this course would have made for a very positive experience</p>
13	<p>First I think Environmental Classic is a necessary required course because of its ability to examine the legacy and critique the future direction of the environmental movement as a whole. These key writings not only fulfill key information about what environmentalism has critiqued in the past, but what direction it needs to take in the future. Also, Environmental History should be a required class, similarly for the reasons mentioned for classics, but also for its briefing on political opinions and outcomes. Most importantly, I think a self-aware narrative is key to understanding Environmental Studies place(s) in academia and the word, and both these classes properly suit that task.</p>	<p>I wanted to take more Environmental History courses concerning the ideas of nature and food politics. These areas are both suited to my individual interests, and are key to understanding important emerging issues within environmental studies.</p>
14		
15	<p>Environmental Justice (or Imperial Nature as an alternative).</p>	<p>Water and Power; Justice; People, Agriculture and the Environment; and Climate and Society. In addition to those ES classes, though, I wish I had been able to take more American Studies, History, and WGSS classes. I think that would have really deepened my understanding of the intersections of environmental studies and those disciplines, even if the classes themselves didn't directly pertain to environmental issues.</p>
16	<p>Economics - I know that many many people would object to this (and I actually feel that it should be required by Mac as a whole) but the ability to understand and evaluate environmental issues from an economic perspective in addition to the social, cultural, political, ethical and scientific perspectives which we are already well-versed in could prove invaluable.</p>	<p>Psychology of Sustainable Behavior - A course that delves into why we make sustainable/unsustainable choices would have been extremely interesting to me.</p> <p>Environmental Education - I love the education department at Macalester and had I more time I would have double majored. I would have truly loved the opportunity to take a cross-listed course, but alas, time has run out. Furthermore, and Environmental Education Major or concentration (core/focus/what-are-they-even-called????) would be a great development within the department, and is a highly sought after career path among many graduates.</p>
17	<p>I think the most important ones (Environmental Science, American Environmental History, Politics and Policy, and Classics) are all already required. These are a good framework for the rest of the major.</p>	<p>Science and Citizenship and Imperial Nature. Just plain old academic curiosity.</p>
18	<p>environmental leadership practicum- was extremely helpful to start thinking with a vocationally-framed mindset.</p> <p>environmental classics- good books, important to read.</p> <p>american environmental history- read a lot of good books.</p> <p>science of renewable energy- should be able to count instead of environmental science.</p>	<p>paleoclimatology- seems like a great course, learn a lot of science and design your own project</p> <p>more intensive statistics class</p> <p>more intensive design class (learning how to use Adobe suite)- both of these skills seem to be highly sought after within tons of different environmental jobs</p>

Student	25. What course(s) do you think are missing from our curriculum that you would like to see offered in the future and why?	26. What course(s) do you think should be dropped as required for the ES major and why?
1		
2	A specific environmental studies related quantitative thinking / research methods / statistical analysis course... perhaps people who are doing a more science-focused track will get more of this, but I ended up taking three different classes to get the valuable information that I think that I needed in three different departments	perhaps some more leeway on the leadership practicum? Or guidance beforehand (right when declaring a major, to let kids know to not have a 4-credit internship while not enrolled?)
3		
4	Any science related curriculum. The only science class that I took exclusively as an ES major was environmental science. I would not have taken another science class if I did not chose a science core. I was especially disappointed in the lack of upper level science classes. If you are a science based ES major, there is nowhere for you to dig in after the introductory courses.	Environmental Leadership Practicum should not be scraped, but I think that it could definitely be reworked. Doing an internship to fulfill the Junior Seminar can be a viable option, but adding the option to do an independent research project should also be allowed.
5	An EJ related class (could be Imperial nature, but one that is more domestically focused should be required as well) - environmentalist narratives can NOT exclude social justice narratives in order to be valuable, inclusive, or relevant to the issues facing us	Classics - or just tweaked so that there is a more broad/international perspective on how environmentalisms have been shaped
6	More courses on climate change, but not with a solely scientific basis.	<p>Environmental science- for people coming in with science backgrounds or doing double majors/minors in the sciences the class is repetitive and not a good use of class time at Macalester. Keeping the science requirement is fine, this class in particular may not be the best way to fulfill it. The same could be said for politics and policy, and environmental history, although I feel that fewer students come in with this knowledge.</p> <p>The leadership practicum class was not particularly useful as a senior. As someone who had done multiple internship before, the majority of the exercises weren't helpful. While a few of the readings and assignments were useful and made me think, a lot of the class felt like a waste of time. I think this would not be as much the case if I could have taken it as a sophomore or junior. I like the internship requirement, but more flexibly on when you do the internship and the class would be an improvement.</p> <p>I also feel like asking students to do the ES capstone when it may have little to do with their focus area is unfair- if there are capstone in other disciplines that fit better with a student's focus area and have environmental themes, they should count.</p>
7	I think there needs to be more courses that deal with conservation. Currently, there are no courses within the department that really tackle this issue head on. With many species around the world going extinct and becoming endangered, people too are becoming more interested in how conservation works. It may be interesting to have a course that deals with this.	
8	International Environmental History and/or Politics More international-focused courses	

Student	25. What course(s) do you think are missing from our curriculum that you would like to see offered in the future and why?	26. What course(s) do you think should be dropped as required for the ES major and why?
9	N/A	Like i said previously i dont think that any of the courses should be dropped but there might be better ways to blend courses or concepts so that you could better cover the breadth of material.
10		I personally did not want to take the Internship Seminar, not because I don't believe in having an internship, but because the class felt too basic and touchy-feely for me. I think that it's good for students to have the option of taking the class to support an internship experience, but I didn't feel that it was necessary for me.
11	<p>Environmental/Sustainable Economics - an economics course that is not in the economics department that critically analyzes the current economic system in how it relates to our environmental problems. The only Environmental Economics course offered at Macalester aligns very closely with neoliberal ideas of growth and resource use, and I find this very problematic.</p> <p>Environmental Natural Resource Management - I don't know what this would exactly look like, but I know a lot of other ES departments offer a resource management course or two, and I think that would be a very practical course for people who are more interested in the social science/natural science aspect of the environment and looking to pursue such careers.</p>	<p>Environmental Science - While I understand it is meant to be an introductory course, the wide breadth and extreme lack of depth covered in this course speaks to its weaknesses. The first line of the course description reads "This course provides basic scientific knowledge and understanding of how our world works from an environmental perspective" - Even that was not achieved. I learned about topics in environmental science, but not about how these topics played in to a larger system of environmental processes. While I think it is necessary to have a science introductory course, I think the department should consider major revisions to the curriculum, or require Ecology or Dynamic Earth as the required science intro courses. These courses were much more pointed to one particular subject, but accomplished the task of thinking about the environment in a scientific and quantitative way that wouldn't be too onerous for the non-sciencey student. Additionally, this class should NOT be required for Environmental Science core students - there is nothing that this class will provide that will not be required throughout the core, which covers each science discipline and thus any topic that would be brought up in ENVI 133.</p>
12	I would like to see a required course covering the broad topic of climate change. This issue is dense immense in every possible way, and I think it would be a disservice to future Macalester graduates to be educated without being briefed on the causes, history, implications, political discourse, and philosophical that this issue currently and continues to affect. One critique I might have for the department is that is lacking (somewhat) of international thoughts and perspectives, and this class would be one way to address the global human environment, as well as create an entire class connecting the interdisciplinary nature of ES.	I do not currently think any of the required classes should be dropped. Their current structure is well-developed in its different spheres to cover this lengthy area of study.
13	more environmental science courses	
14	Something about food systems involving a hands-on component would be cool. I would also have liked to have a class in environmental activism, maybe from a historical perspective.	I don't think Environmental Science should be required in addition to another natural science course. Also, I don't really understand what the point of the methods class is - especially because they're so varied between disciplines.
15	<p>Agriculture related courses or at very least a means of making use of the U of M's range of courses and Agriculture Extension Agency.</p> <p>A great deal of the work we do/will do as ES graduates involves community organizing. A community organizing how-to course would be extremely practical. Or perhaps some sort of lecture series (a 2-credit abbreviated evening course or something).</p>	I think it would be reasonable to do away with the Environmental Science course and instead require an alternative science course. (Lake, Streams, Rivers; Biodiversity and Evolution; Ecology; Dynamic Earth and Global Change; History and Evolution of the Earth; Environmental Geology)

Student	25. What course(s) do you think are missing from our curriculum that you would like to see offered in the future and why?	26. What course(s) do you think should be dropped as required for the ES major and why?
16	I think there are very few strong offerings that bridge ES and the humanities. Classics and Ethics are the only ones I can think of worth taking.	I honestly can't think of any.
17	this is a huge major as it is.. i would not recommend adding any more requirements!	the environmental science class should have a paleoclimate alternative and a science of renewable energy (physics) alternative.

Student	27. Do you have any additional comments you would like to share?
1	
2	<3 ES!
3	
4	When considering topics for Senior Seminar, I think that topics focusing on geography should not be considered. I do not have a vendetta against geography, however there is a geography seminar that fulfills the ES Senior seminar. I did not take the geography seminar because I did not study and am not as interested in this topic, however the project that we ended up doing for Seminar was strongly geography based.
5	More social events/get to know other majors would be great.  ALSO, I would like to recommend incorporating more Alumni Reader projects. This project was part of Sarah West's Environmental Economics class and was one of the most helpful academic/networking exercises I've ever done in my four years. I understand it involves a lot of coordination, good relations, (and availability on the part of the alumni)...but it is really valuable and many of my peers who I have talked to have not had that opportunity and were surprised that this existed and really wish they had.
6	It was really difficult to complete my concentration as planned because so few courses in it were offered my last two semesters at Macalester and several of those offered overlapped. Providing a great range of courses that count towards the concentration would help this. ES is a huge major, and while the interdisciplinary nature is great appreciated, allowing students more flexibility with some of the requirements would allow a more fulfilling major.  Overall I really loved being an environmental studies major, and the department as a whole.
7	Yes. Please do not take the cross listing away from the Fall capstone. Comparative Environment and Development Studies. The ES capstone is not interesting and appealing to all students within the department, so please let future kids too have an option of not having to do a group capstone. Last semester several majors up to 6 or so, i believe were enrolled in that capstone. Evidence to show that students are interested in that class.
8	
9	
10	
11	The major plan is simply too large. My Environmental Science major included 19 courses. I could have nearly doubled majored in two other departments with those 19 courses instead, if I had wanted to. Much of my time at Macalester was spent dedicated to filling my ES course requirements, which left little time for fun side-courses that are meant to make up the fluff of a liberal arts education.  I think that perhaps the Environmental Science core should be considered different than the Environmental Studies major. I found values in the social science and humanities courses that I took, but when thinking about career preparedness, a full-on major plan of science courses with only a few supplemental social science (not humanities) courses would be more beneficial to what I, as a science student, hope to achieve and what career path I wish to follow. For example, the requirements for the Environmental Science core are extremely weak in their mathematics requirements. I personally would benefit from math courses going up to multivariable calculus and differential equations. However, because of the heavy humanities and social science requirements, there was no room to emphasize these quantitative skills. Overall, I believe that there should be separate program developed for Environmental Science that has a much strong emphasis on quantitative depth in science courses and departments that would suit the science- minded student
12	
13	
14	I value a lot of things that I learned in my ES classes, and some of them profoundly influenced the way I see and act in the world around me. That said, I also felt like I spent a lot of time in introductory classes across the breadth of disciplines, whereas I wish I could have dug deeper into what most interested me. Environmental Justice is what most calls to me within ES, and I think given more flexibility to build a core for myself I could have pushed myself to grow a lot from studying that. That is my main comment: I wish the course requirements had been way more flexible. Following the structure of the major felt like hoop-jumping for about half of the classes, and I would liked to have created a more personally challenging major and have more choice for classes, with

Student	27. Do you have any additional comments you would like to share?
	guidance to do that wisely. In being SO interdisciplinary, I couldn't really get very deep into another discipline or into one driving idea.
15	<p>The ES department is a rather disconnected community, due in most part to the interdisciplinary nature of the major. Thus many majors and minors remain anonymous to one another. There are definitely little things the department could do to bring the group together.</p> <ul style="list-style-type: none"> <li>- The English Department for example, offers bagels and coffee on Monday mornings.</li> <li>- We could improve the student lounge. (or even just talk it up more).</li> <li>- diversify the book selection in the lounge, maybe add some sustainability films</li> <li>- ES movie nights (there are SO many films/documentaries that are incredibly relevant to our studies)</li> <li>- Happy Hours for juniors/seniors with the staff and professors.</li> </ul>
16	Nope.
17	the es dept is still struggling with forming a cohort/ community among the majors. i would highly recommend organizing a dept-wide camping trip at the beginning of fall semester (that any major/minor attend) in order to foster more of a community spirit. also having a place for majors to work together (ie a computerlab) would be very helpful in creating a space that es majors can call their own.

## Appendix C. Learning Objectives

Student Name \_\_\_\_\_

<b>Learning Objectives</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level achieved</b>
The ability to think systematically about complicated problems. (based on written work and presentations)	Treats related ideas or data as unrelated, or draws weak or simplistic connections	Begins to establish connections and perceive implications of the material	Brings together related data or ideals in productive ways, thoroughly discusses implications of material	Develops insightful connections and patterns that require intellectual creativity	
The ability to understand the premises of diverse disciplines. (based on written work and presentations)	No connections to other disciplines.	Limited or forced connections to other disciplines.	Explores connections to other disciplines.	Meaningful and effective connections to other disciplines.	
The ability to appreciate the nature of scientific uncertainty and controversy. (based on written work and presentations)	Doesn't acknowledge that there is uncertainty or controversy.	Simply reports what one side or the other says with no discussion.	Acknowledges differing points of view within the scientific community, but overlooks or misrepresents some important points of view.	Is aware of and acknowledges differing points of view within the scientific community, and uses reasoned arguments to explain why he or she has adopted a particular view.	



<b>Learning Objectives</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level achieved</b>
The ability to appreciate the nature of our species, spirituality, aesthetics, and relationships and differences among cultures (based on written work and presentations)	Does not recognize the impact of human nature, spirituality, aesthetics and cultural knowledge and is unable to formulate clearly contextual analysis.	Recognizes the impact of human nature, spirituality, aesthetics and cultural knowledge but is unable to formulate a clear contextual analysis.	Recognizes the impact of human nature, spirituality, aesthetics and cultural knowledge and explains it using contextual analysis.	Recognizes the impact of human nature, spirituality, aesthetics and cultural knowledge and explains it using contextual analysis that addresses the relationship among different contexts.	
The capacity for consensus building and appreciation of group dynamics (based on group work)	All group members have different perspectives and are not willing to listen to those of the other group members. Bickering and miscommunication frequently occur.	Some members' perspectives are heard more frequently than others. No attempt is made to draw out the opinions and viewpoints of more "silent" group members.	All members are comfortable and satisfied with the means of making project decisions. However, not all members have a voice in the way those decisions are made.	All members are comfortable and satisfied with the means of making project decisions. All group members have a voice in decisions, whether they are finally made by the consensus of the group as a whole, or a leader or subcommittee. Decisions are made rapidly and efficiently.	

<b>Learning Objectives</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level achieved</b>
The ability to recognize and communicate with diverse kinds of specialists. (based on group work)	Several of the group members demonstrate an inability to work or communicate with others of differing knowledge and abilities. The members' work reflects apathy or callousness towards the feelings of others. As a result, group cooperation breaks down.	Some of the group members have difficulty adjusting communications to accommodate persons of diverse knowledge and sensitivities. Members do little to encourage respect in others for individual differences.	Most of the group members show the ability to communicate with persons of diverse knowledge and sensitivities. Each member respects the feelings of others.	Group members demonstrate insight concerning the feelings and levels of knowledge of the other members and exhibit this insight while communicating. Each respects individual differences and sensitivities of the others.	

Some rubric language provided by David Blaney, Political Science Dept. Macalester College.

Aesthetic and spirituality rubric derived from <http://www.mdc.edu/learningoutcomes/documents/Group4Rubric.pdf>.

Scientific uncertainty and controversy rubric derived from <http://uteach.utexas.edu/ResearchMethods/CourseRubric.pdf>.

Group dynamic rubrics derived from [http://dhc.ucdavis.edu/faculty/seminarfaculty/rubrics/Group\\_Dynamics\\_Rubric.doc](http://dhc.ucdavis.edu/faculty/seminarfaculty/rubrics/Group_Dynamics_Rubric.doc)