

**Ohio University**

**Environmental Studies Program**

Self-Study  
September, 2008

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## **Introduction**

The Environmental Studies Program at Ohio University is an interdisciplinary academic unit that offers a Master of Science in Environmental Studies (MSES), a graduate certificate in Environmental Sustainability and Leadership, an undergraduate certificate in Environmental Studies, and numerous opportunities for faculty research collaboration and curriculum development. Created in 1970, the program meets the needs of students looking for a broader academic experience than a traditional course of study can provide.

The mission of the program is to equip students to understand and solve environmental problems, by integrating perspectives of biological sciences, physical sciences, social sciences and humanities. The program is distinctive in its approach of generating high quality research, attracting high caliber students, and creating opportunities for interdisciplinary collaboration in an extremely cost-effective manner.

## **General Department Information**

### *Faculty Profile*

Faculty affiliated with the program come from numerous colleges, departments, and programs across the university and can be categorized as: 1) Program Director; 2) Associate Director; 3) special appointments; 4) advisory board member; 5) active faculty; and 6) affiliated faculty.

- 1) Program Director. The only faculty member who holds an official appointment with the Environmental Studies program is the Program Director. The Director is responsible for instruction, curriculum revisions, admissions decisions, graduate appointments, community outreach, and other administrative tasks. The Director also serves as the liaison between the program and the College of Arts and

Sciences and the graduate studies office, and is a member of the Senior Leadership Group at the Voinovich School of Leadership and Public Affairs. Dr. Gene Mapes was the Director of Environmental Studies until 2006 when she retired. In July 2006, Dr. Michele Morrone assumed the role of Director. She currently splits her time between the Environmental Health Science Program in the College of Health and Human Services (51 %) and the Environmental Studies Program (49 %), her vita can be found in Appendix A.

- 2) Associate Director. The Associate Director of Environmental Studies assists the Director in programmatic initiatives and serves as the undergraduate certificate director. Dr. Nancy Manring, an Associate Professor in the Department of Political Science is the Associate Director and her brief biography is in Appendix B.
- 3) Special Faculty Appointments. In 2007, Dr. Ted Bernard, a Professor Emeritus in the Department of Geography, joined the Environmental Studies Program as a special appointment. Dr. Bernard is teaching ES 560 and assisting in graduate student advising. A brief biography of Dr. Bernard is in Appendix B.
- 4) Environmental Studies Advisory Board (ESAB). Individual faculty members are appointed by the Dean of the College of Arts and Sciences to serve on the Environmental Studies Advisory Board. Since 2001, 20 faculty members, representing 14 different academic units and 3 colleges (Arts & Sciences, Engineering, and Health and Human Services), have served on the ESAB. Appendix C summarizes Advisory Board membership from 2001 through 2008 and includes brief biographies of these faculty. In the 2008-09 academic year,

new ESAB members will represent two additional colleges (OUCCOM and Communication). The ESAB considers themselves Environmental Studies faculty members even though they do not hold official appointments in the program. In December, 2007, the ESAB held a retreat to define their roles and they agreed that their major role is providing recommendations to help the Director make better decisions. In addition, Board members serve as ambassadors for the program and liaisons to their departments, and they also complete tasks such as reviewing applications and making student funding recommendations.

- 5) Active Faculty. Faculty members from across campus are active in the program by serving as advisors and committee members to MSES students. Faculty from 14 different academic units served as primary advisors for the 109 students who graduated with Master of Science in Environmental Studies (MSES) between 2001 and 2008. A complete listing of faculty advisors for MSES students is in Appendix D.
- 6) Affiliated Faculty. More than 80 faculty members are affiliated with the program. An affiliation means that, while these individuals may have not served on a committee recently, they are willing to do so. These faculty members also teach classes that are requirements and electives for both graduate and undergraduate students. Appendix E lists all faculty members who are affiliated with the program.

The unique faculty structure of the Environmental Studies program directly relates to *Vision Ohio* goals that focus on enhancing collaboration among academic units. The generous

support of faculty members in numerous departments and several colleges are essential to the sustainability of the program and contribute to its cost-effectiveness.

*Programmatic Practices*

Teaching: Environmental Studies graduate students (MSES) and undergraduate certificate students are taught by faculty from across campus. Regardless of the curriculum track chosen by the MSES student (see Appendix F), he or she receives instruction from faculty in multiple departments, schools, and colleges. The program director teaches the Environmental Studies graduate seminar (ES659), which is required for all MSES students. This seminar class orients students to graduate school and focuses on research methods, proposal writing, and working with faculty committees. A syllabus for ES 659 can be found in Appendix G.

Beyond the introductory seminar, Environmental Studies core classes are taught by at least 10 faculty members from 5 departments (Table 1). Within the curriculum tracks, more than 100 additional classes from seventeen departments, in four colleges, have been designated as appropriate curricular choices (Appendix I).

Table 1. MSES Core Courses	
Class Prefix and Number	Class Title
ANTH 578	Human Ecology
BIOS 577	Population Ecology
BIOS 578	Community Ecology
GEOG 517	Landscape Ecology
GEOG 557	Environmental Law
GEOG 547	Natural Resource Conservation
PBIO 522	Tropical Plant Ecology
PBIO 536	Plant Community Ecology
PBIO 537	Ecosystem Ecology
POLS 525	Environmental and Natural Resource Policy

Graduate research committees are assembled by the student with the guidance of the program director. During the ES 659 class, students are required to meet with at least 3 different

faculty members who share their research interests. Because the program is interdisciplinary, graduate committees must be comprised of faculty members from at least 2 different disciplines.

Similar to the graduate courses, the undergraduate certificate classes are taught by faculty from across campus. This approach allows students to be exposed to an array of courses and faculty members from a variety of departments and programs. All undergraduate certificate students are advised by the certificate coordinator who is also the Associate Director of Environmental Studies.

Research/scholarship/creative activity: All faculty members who serve on the Environmental Studies Advisory Board or supervise graduate research projects maintain research programs in their home departments. In addition, the program director maintains an active research agenda and involves graduate students as much as possible. All affiliated faculty are evaluated based on their home department guidelines for research and scholarly activity. MSES students tend to stimulate multidisciplinary collaboration among faculty members throughout the university. Examples of the multidisciplinary nature of research in the Environmental Studies program can be found in Appendix I which summarizes MSES student theses and research projects from 2001-2008, including the interdisciplinary faculty committees.

Service: Faculty involved with the Environmental Studies program comply with service requirements in their home departments. In addition, the current director provides service to the University on behalf of the program. She is currently a member of: 1) the Consortium for Energy, Economics and the Environment (CE3); 2) the senior leadership team of the Voinovich School; 3) the promotion and tenure committee of the Voinovich School; 4) the University Interdisciplinary Council; and 5) the Tropical Disease Institute. The Associate Director serves as a member of the University Ecology and Energy Conservation Committee.

As part of the Voinovich School, the Environmental Studies program works closely with the School's Environmental Management program by providing student research assistants when possible and participating in community projects. Recognizing the need for additional community service opportunities, a new option for MSES students will be available beginning Fall 2008. The Environmental Leadership Option\* consists of a problem-solving approach that requires students to work with an external organization on a mutually agreed-upon project. In the 2007-08 academic year two students piloted this option; one worked on an alternative transportation plan for the University with a grant from the National Wildlife Federation and one worked for the Monday Creek Watershed. Interest in this option is high and an orientation session will be held in the fall of 2008.

Plans are also underway to implement a leadership emphasis as part of the undergraduate certificate. This emphasis will provide opportunities for undergraduate students to become involved in service activities as part of their certificate requirements. Each student who selects this emphasis will be required to complete an internship or service learning experience.

Interdisciplinary Activity. All of the activities in the Environmental Studies program, including teaching, research, and service, are truly interdisciplinary. Evidence of interdisciplinarity is found in our programmatic goals, which are to:

- Bring together interdisciplinary university partners and external community partners to shape the program's engagement with environmental, energy and economic issues, solutions and policy;
- Provide undergraduate and graduate students with opportunities in applied research, which focus on developing real-world solutions to regional, national and international challenges;
- Attract students from an array of economic, political and social backgrounds to extend the reach of the ES program; and

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\* Additional information about this option is discussed below and found in Appendix J.

- Aspire to national prominence

MSES students design an interdisciplinary curriculum plan that optimizes their understanding of environmental issues. Undergraduate certificate students participate in a rigorous, systematic, interdisciplinary study of the complex interactions between humans, other organisms, and the environment that enhances critical thinking and problem-solving skills.

One recent example of our emphasis on interdisciplinary collaboration is found in the “The Kanawha Project,” which is an ongoing effort to integrate environmental issues across the undergraduate curriculum through faculty professional development. The project was supported by an internal 1804 grant in 2007-08 and the Environmental Studies program received additional funding from the Ohio Environmental Protection Agency to continue and expand this project to include additional faculty over a two year period. A summary of the Kanawha Project can be found in Appendix K.

Partnerships Outside the University. This category is one that the Environmental Studies Program would like to build upon. The Environmental Leadership Option for graduate students and emphasis for undergraduate students will enhance these partnerships. In addition, one near-term goal of the program is to assemble an external advisory group that could serve to enhance the strategic initiatives of the program.

### *Adequacy of Resources*

Interdisciplinary programs can provide many excellent benefits; however, they also require specific support, because they are neither restricted by, nor directly supported by, traditional departmental infrastructures. The interdisciplinary Environmental Studies program supports the academic mission of the university by providing quality education to numerous students in a cost-effective way.

Personnel. From 1975 to 1994, the program was administered by a Group 1 (tenure-track) faculty member, who served as a part-time director with courtesy staff support from each director's home department. In 1995, three important changes occurred: 1) building space was made available for the program in the President Street Academic Center; 2) a Group 2 faculty member (with graduate faculty status, but no assigned departmental duties) was appointed to the part-time director position; and 3) a part-time staff position was created to provide secretarial support. The part-time secretarial position was assigned one-third time to the Environmental Studies program and shared the remaining two-thirds of the position with the undergraduate women's studies program.

In 1999, Environmental Studies moved to the Ridges in order to work more closely with the Institute for Local Government Administration and Regional Development (ILGARD), a major program partner. The move also resulted in a reconfiguration of the part-time secretarial appointment, which was increased to one-half time with the remaining one-half of the position temporarily funded by the Voinovich Center for Leadership and Public Affairs.

In 2006, several notable changes occurred in the program management. First, a new director, who is a Group I faculty member was hired which is in-line with the original approach to the program. However, the Director's position remains part-time, with a 49 percent appointment. In addition, as the Voinovich Center transitioned to the Voinovich School, the Environmental Studies program received additional support for administrative staff. The clerical position was upgraded to a "program manager/academic advisor" to provide critical management support for the program. This newly created position is designed to allow the Environmental Studies program to grow in terms of curriculum, students, and projects.

The program manager is responsible for managing the budget for the Environmental Studies Program; coordinating communication activities; assisting the director in carrying out responsibilities such as planning and development of grant projects, direction of outreach activities, and coordination of academic programs; coordinating events including Environmental Studies Advisory Board meetings, special programs, lectures, workshops or conferences; assisting the director in graduate recruitment efforts; and counseling and assisting Environmental Studies students with all aspects of their career development.

As the program manager assumes more administrative duties, we are relying more on student workers to assist in important clerical tasks such as maintaining students files. In addition, our website is maintained by a student worker and a PACE student assists in the production of our annual newsletter. It is critical that we maintain the student help.

Graduate Stipends. Graduate recruitment and retention is hampered by the limited number of assistantships budgeted to the Environmental Studies program. The program has 6 graduate assistantships and 10 tuition waivers (30 quarters) available. The assistantships are offered to students who are exceptional candidates in terms of their academic backgrounds, research motivation, and potential. Tuition waivers are also competitive and only offered to the most outstanding students.

Creative networking and the search for fellowship support are two strategies employed to provide additional financial support for the students, but both strategies require extensive time and negotiation. Matching unsupported students to departmental teaching assistantships and externally funded research positions requires knowing the specific skills and academic backgrounds needed for each position and having an appropriately qualified student willing to

wait for such unpredictable funding. Each year students in the program are fortunate to receive offers from other academic departments in the university.

While very welcome, such additional funding is often available only on short notice, thereby requiring an additional time investment immediately before the quarter begins. This unstable funding situation limits effective recruitment and long-term planning. It minimizes the opportunity to obtain early commitment from many excellent students who are very interested in the program, but accept offers elsewhere. Usually the better students apply early and are not willing to wait to see if funding “might” become available. Students who apply late, or can otherwise choose to delay their enrollment, often have other special needs that require additional staff support, such as non-traditional academic, personal, or employment backgrounds.

Evaluation. For the director and the faculty advisory committees, there is always additional work involved in coordinating and supervising interdisciplinary research. Since all potential research advisors are faculty with regular service obligations to their home departments, they may not earn recognition in their departmental annual review process for their investment in working with Environmental Studies students. One way to resolve this issue would be to institutionalize the University’s commitment to interdisciplinary collaboration and to officially and formally recognize the contributions that faculty across the campus make to interdisciplinary programs.

Unlike a departmental chair, the Environmental Studies director has few resources with which to reward affiliate faculty directly. The current operating budget for the program is \$9,975 per year, a figure that has not changed in at least 5 years. This budget is used to provide support to graduate students for their research and travel, printing expenses for the newsletter and general program materials, recruitment efforts, and all other operating expenses. Without the generous

support from the Voinovich School, several other academic units (including the Director's home department), and external funding, the program would not be sustainable. In addition faculty members who are most directly involved with the program essentially volunteer their time without monetary compensation, a fact that also affects the sustainability of the program.

At this point in time, the Environmental Studies program is maximizing all of the resources available and without additional investments the growth of the program will be limited. Although many new initiatives have been developed and implemented recently, these have been accomplished by faculty and staff who have exceeded their compensated time commitments to the program.

## **Undergraduate Program**

### *Program Goals and Curriculum*

The Environmental Studies Program offers an undergraduate certificate which allows students from all majors to enhance their curriculum with environmental content.

Learning Objectives. The student who is pursuing the undergraduate certificate in Environmental Studies will:

1. Participate in a rigorous, systematic, interdisciplinary study of the complex interactions between humans, other organisms, and the environment that enhances critical thinking and problem-solving skills;
2. Select a curriculum plan that complements his or her major by enhancing awareness of the integration of environmental issues with other disciplines;
3. Demonstrate an improvement in environmental literacy; that is, the understanding of diverse environmental issues and problems; and
4. Enhance his or her career options by incorporating environmental knowledge and credentials with his or her major field of study.

Current Curriculum. The certificate requires completing 32–35 hours of approved coursework selected from the courses outlined below. Many certificate courses currently satisfy both Tier and home College requirements.

- Core courses (12-13 hours):
  - One of the following:
    - GEOG 201 - Environmental Geography (4)
    - GEOL 215 - Environmental Geology (4)
  - POLS 425 - Environmental and Natural Resource Politics and Policy (4)
  - One of the following:
    - BIOS 220 - Conservation and Biodiversity (4)
    - BIOS 275 - Ecology in the 21st Century (4)
    - BIOS 375 - Animal Ecology (5)
    - PBIO 209 - Plant Ecology (4)
- Natural Science Electives (8-9 hours)
  - One chemistry class (except CHEM 115)
  - One course from an approved list (see Appendix L)
- Quantitative Skills (4-5 hours)
  - One course from an approved listing (Appendix L)
- Social Science Electives (8-9 hours):
  - Two courses in 2 different departments from an approved list (see Appendix L)

Curriculum Enhancement Plans. In 2008-09, we will work with the University curriculum process in an attempt to enhance the undergraduate certificate. We would like to see more Ohio University students step into environmental leadership roles as policy makers, educators, communicators, scientists, engineers, and community members. In order to help prepare them for these important and demanding positions, we are proposing the Environmental Leadership Emphasis. This emphasis combines disciplinary course work and an interdisciplinary, problem-solving experiential learning. The learning experience will necessitate that students move beyond *awareness* of problems into practical experience *solving* environmental problems.

In line with this reasoning, we are proposing some changes to the curriculum and the creation of at least one undergraduate Environmental Studies course that students can use to earn

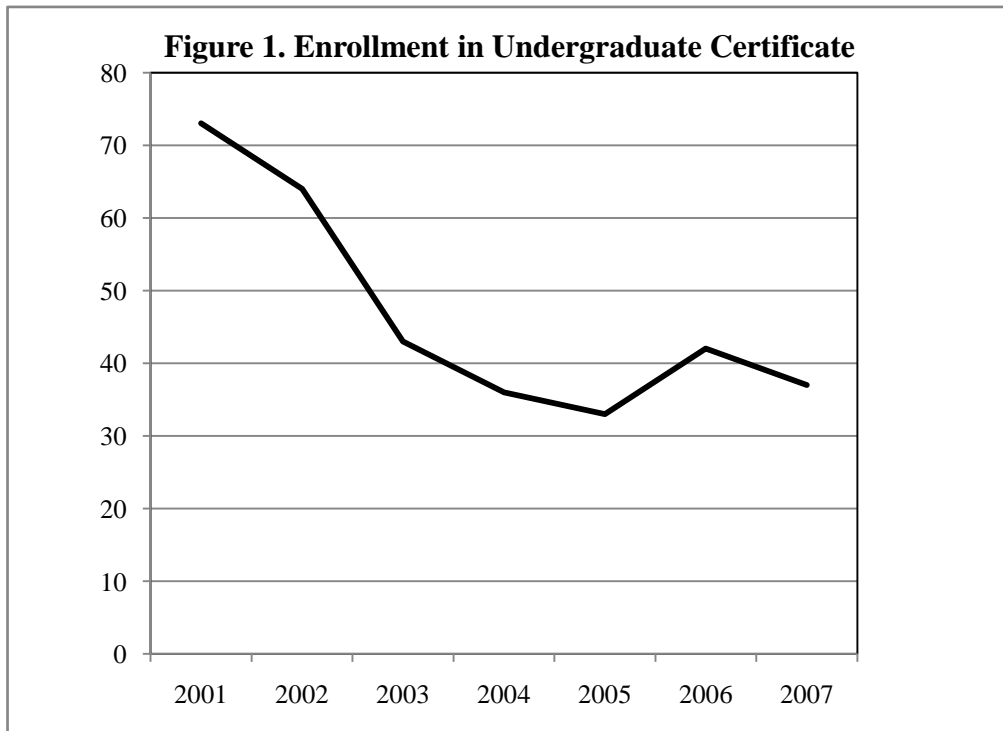
internship credit. A full explanation of the changes can be found in Appendix L which will be submitted to the College of Arts and Sciences curriculum committee in fall 2008.

Faculty. The main faculty member involved with the undergraduate certificate is also the Associate Director of Environmental Studies. This faculty member advises 30-40 students per year as they complete the certificate. As of 2007, this faculty member began receiving a summer stipend from the Voinovich School for her work with the program; until then the job was voluntary.

Because of the recordkeeping and advising involved with the certificate, there are very limited resources available to recruit and publicize its availability. During the 2007-08 academic year, we were fortunate to have a staff member supported by the dual-career network. This “community outreach coordinator” proved that additional resources for recruitment and outreach could greatly enhance the prominence of the Environmental Studies program. Funding was not available from the dual-career network after the 07-08 academic year, so this individual is now supported part-time through the Kanawha Project grant. This means that recruitment and outreach related to all Environmental Studies initiatives, including the undergraduate certificate, will suffer.

Students. From 2001 through 2007, 328 students enrolled in the undergraduate certificate; however, as Figure 1 shows enrollment in the certificate has declined since 2001. One reason for this drop in is likely a direct result of a lack of resources available for recruitment and publicity. Enrollment in the certificate began to rise again in 2007-08 due mainly to the work of the dual-career staff member who attended the majors fair and worked with numerous undergraduate student organizations.

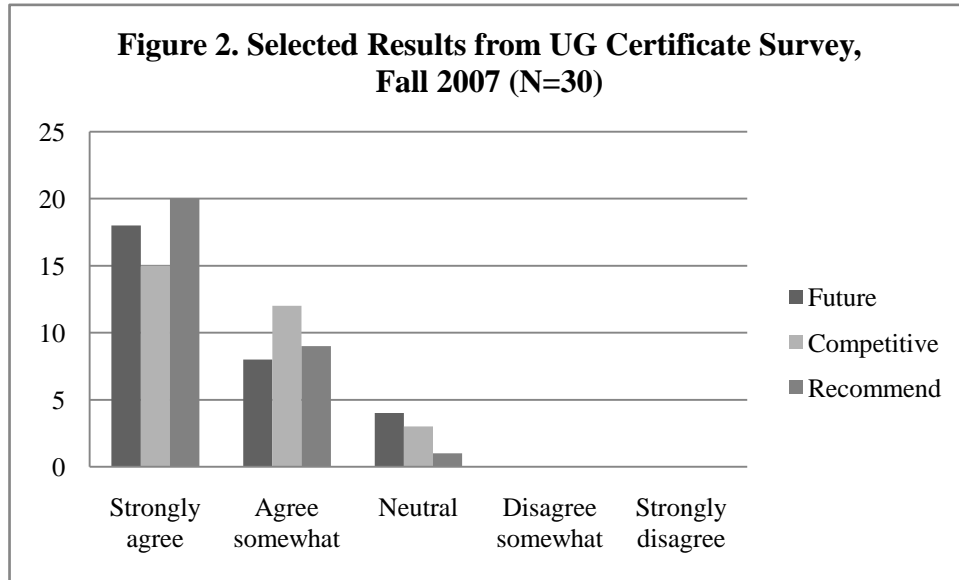
Students who enroll in the certificate come from numerous majors across campus, once again emphasizing the contribution the program makes to the University's interdisciplinary collaboration goals. Appendix M identifies students enrolled in the certificate by major during the 2001-07 time period. The majority of students who enroll in the certificate are enrolled in



major programs offered through the College of Arts and Sciences, such as Biological Sciences and Geography, suggesting an untapped potential for recruiting students from other colleges.

Student Evaluation. In the fall of 2007, MSES students worked on a project to gather data from current students enrolled in the undergraduate certificate. Under the guidance of the program director, with approval from the IRB, students developed and implemented an on-line survey. Figure 3 summarizes some of the opinions of the 30 certificate students who completed

the survey. Overall, 86 percent of the respondents believe that the certificate will contribute to their future career plans. Ninety percent of the respondents expect the certificate to make them more competitive in the job market. Almost 100 percent of the respondents would recommend the certificate to their friends.



**Key:** **Future** = “I expect the environmental studies certificate will contribute to my future career plans;” **Competitive** = “I expect the environmental studies certificate will make me more competitive in the job market;” **Recommend** = “I would recommend the certificate to my friends”

In providing an academic program that students believe will enhance their career opportunities, the undergraduate certificate is addressing the *Vision Ohio* undergraduate academic goal of serving the needs of the region, state, and nation. In addition, the certificate requirements and the Kanawha Project directly relate the *Vision Ohio* goal of “acquainting

students with the values associated with the public good.” Environmental values are the driving force behind the undergraduate certificate and the Kanawha Project and are among the most important components of the public good.

## **Graduate Program**

### *Program Goals and Curriculum*

The Environmental Studies program offers a Master of Science degree in Environmental Studies (MSES). The Environmental Studies program directly contributes the graduate education goals of *Vision Ohio* because of its interdisciplinary focus on energy and the environment.

Learning Objectives. The student who is pursuing the MSES will:

1. Design an interdisciplinary curriculum plan that optimizes their understanding of environmental issues;
2. Formulate research questions and implement methods to answer these questions;
3. Express an enhanced understanding of environmental issues in the form of a thesis or project report;
4. Demonstrate improvements in written and oral communication skills through numerous opportunities for preparing written reports and presenting research orally;
5. Participate in learning activities that provide service to the university and community; and
6. Prepare for environmental careers in the public or private sectors or for doctoral programs in environmental fields.

Curriculum. Graduate coursework and research are integrated throughout the course of study, which generally requires two years and at least 45 graduate credit hours. In the first year, emphasis is placed upon completing required courses and establishing an interdisciplinary faculty advisory committee consisting of at least three graduate faculty members in at least two different academic units. In the second year, the student focuses on research and internships are

encouraged, but not required, unless the student is pursuing the Environmental Leadership Option.

Although all MSES students receive one degree, they can select different concentrations, or “tracks,” based on their interests and career goals. These tracks do not appear on the student’s transcript, so students highlight their concentration in their resumes. Until 2008, there were 5 curriculum tracks: 1) Environmental Archaeology; 2) Environmental Policy and Planning; 3) Physical and Earth Sciences; 4) Life Sciences; and 5) Environmental Monitoring. In 2007 an additional track, Environmental Education and Communication, was approved by the ESAB and became a choice in the fall of 2008. This track is designed to address the growing demand from students who are interested in qualitative research and a career in an environmental service organization, such as a nonprofit.

Regardless of the track that students choose to pursue, each MSES student must complete core courses in environmental policy and ecology (see Table 2), in addition to the seminar discussed above. A menu of elective courses is reviewed annually by the ESAB and is used as a guide to round out the student’s curriculum. Course information for all 6 curriculum tracks can be found in Appendix F.

Interdisciplinary Research. Despite the option available for a research project, the majority of MSES students choose to complete a thesis to fulfill degree requirements. MSES student research enhances the interdisciplinary scholarship mission of Ohio University by pulling together faculty from a wide range of academic units. Evidence of the interdisciplinary nature of MSES research can be found in the theses (a listing of theses for the self-study period can be found in Appendix I), and some examples of recent theses titles include the following:

- *Clean Air in South Texas: An Estimation of Biogenic Tropospheric Ozone Precursors Using Various Models*

- *Environmental Education on the Web: Worthwhile or Worthless*
- *Impact of Specific Acid Mine Drainage Contaminants on Macroinvertebrate Communities in Southeastern Ohio Streams*
- *The Role of Threespot Damselfish (*Stegastes planifrons*) as a Keystone Species in a Bahamian Patch Reef.*
- *Archaeological Settlement of Late Woodland and Late Prehistoric Tribal Communities in the Hocking River Watershed, Ohio*
- *The Link Between Green Purchasing Decisions And Measures Of Environmental Consciousness*
- *A Study of Urban Forestry in Baltimore, Maryland: Analyzing the Significance of Street Trees in Bolton Hill*
- *An Exploration Of Policy Implementation In Protected Watershed Areas: Case Study Of Digya National Park In The Volta Lake Margins In Ghana*
- *An Assessment of the Impact of the Deregulation of the Electric Power Sector in the U.S. on the Efficiency of Electricity Generation and the Level of Emissions Attributed to Electricity Generation*
- *Assessing Urban Containment Policies for Managing the Urban Growth of Santa Tecla City, El Salvador*

Program Vitality. The MSES component of the Environmental Studies program is unique in that it institutionalizes interdisciplinary collaboration and research among numerous academic units at the University. The requirement for several disciplines to be represented on each graduate student committee enhances faculty research and communication. Furthermore, the increasing importance of environmental issues from local to global levels indicates that a curriculum that offers students exposure to multiple disciplines will result in long-term educational benefits.

Several major curriculum changes and innovations have occurred recently. First, the graduate program has been enhanced with the addition of the following 4 new course offerings which were approved in 2007:

## Environmental Studies 7-year Review Narrative

- ES 560      Concepts in Environmental Sustainability and Leadership (5). Examines global and regional environmental issues and considers the scientific basis for policy options. Concepts and discussion of environmental sustainability and principles of environmental leadership.
- ES 690      Independent Reading in Environmental Studies (1-5). Directed individual reading and research.
- ES 692      Environmental Studies Internship (1-5). Offers graduate students the opportunity to pursue practical experience in the environmental field.
- ES 695      Environmental Studies Thesis (1-12)

Since these courses have been approved and are being offered under the ES course prefix, it is now possible to get a sense of Weighted Student Credit Hours (WSCH) that can be directly attributed to Environmental Studies students. During the 2007-08 academic year, courses with the ES prefix generated 2,004 WSCH. In actuality, the WSCH generated by Environmental Studies students is much higher as these students enroll in graduate and undergraduate in classes throughout the University.

The ES 560 course is particularly exciting because it directly links to a new Graduate Certificate in Environmental Sustainability that was also approved in 2007. Sustainability is a concept that is applicable across many disciplines including environmental studies, business, economics, engineering, chemistry, geography, sociology, anthropology, political science, and biological sciences. The need for graduate studies in sustainability is based on numerous global issues including: 1) the pressure to address energy consumption issues, including alternative fuels; 2) the need for societal awareness of the environmental impacts of personal consumer choices; 3) new business models that are incorporating environmental auditing in management and production decisions; and 4) the emergence of new approaches to land use planning and construction that includes green building design to reduce adverse environmental and health effects of housing.

This new certificate program offers graduate students who are not in Environmental Studies the necessary multidisciplinary skills and global awareness needed to understand the broader impacts of personal consumer choices on the environment. The certificate will expose graduate students from many disciplines to the economic, societal, and environmental effects of consumer choice and enhance the graduate degree by incorporating problem-solving and critical thinking skills. The certificate also will allow students to improve their understanding of basic concepts of sustainability as they relate to their specific degree program and provide opportunities for working professionals (i.e. teachers and business leaders) to enhance their professional careers.

The basis of the certificate program is to address a comprehensive study of environmental sustainability including the four areas of: 1) economy, 2) society, 3) environment and 4) technology. Students are required to take 5 classes to complete the certificate for 20-24 credit hours. To accomplish this, the certificate curriculum uses a combination of existing and new courses, as such, the certificate will generate additional WSCH as both degree and non-degree students pursue this opportunity. Additional information about the new graduate certificate in Environmental Sustainability can be found in Appendix N.

Another exciting new program available to MSES students beginning in the fall of 2008 is the Environmental Leadership Option. This option will help prepare students for leadership roles as policy makers, educators, communicators, scientists, engineers, and community members. This option combines interdisciplinary coursework with a problem-solving experience in lieu of a thesis. Students must complete ES 560 and at least 5 credit hours of ES 692. Each credit hour of ES 692 is equivalent to 2 contact hours, so students are required to complete a total

of 100 hours of service to an environmental organization. Additional information about the option can be found in Appendix J.

The Environmental Studies program has always been a vital part of the interdisciplinary mission of the University. With the new emphasis on environmental sustainability, leadership, and service, the MSES program is poised to contribute even further to many of the strategic goals currently being implemented at Ohio University.

### *Faculty*

Information about faculty who are involved with MSES students is discussed above. As alluded to earlier, one issue facing the program is recognizing faculty who voluntarily serve as research advisors and committee members to the MSES students. The ES program director currently has no resources available to compensate these faculty members. Formal recognition by the university administration of interdisciplinary service in general, and Environmental Studies service in particular, could be one way to highlight the importance of these faculty members.

### *Students*

Admission. Admission to the MSES program requires an undergraduate degree in agriculture, biology, botany, chemistry, ecology, economics, environmental sciences, engineering, forestry, geography, geology, microbiology, political science, zoology, or other cognates. Students lacking suitable background in one of these fields, may be required to take additional coursework. High-achieving students in other fields, such as art and history, have successfully completed the degree and are currently pursuing environmental careers.

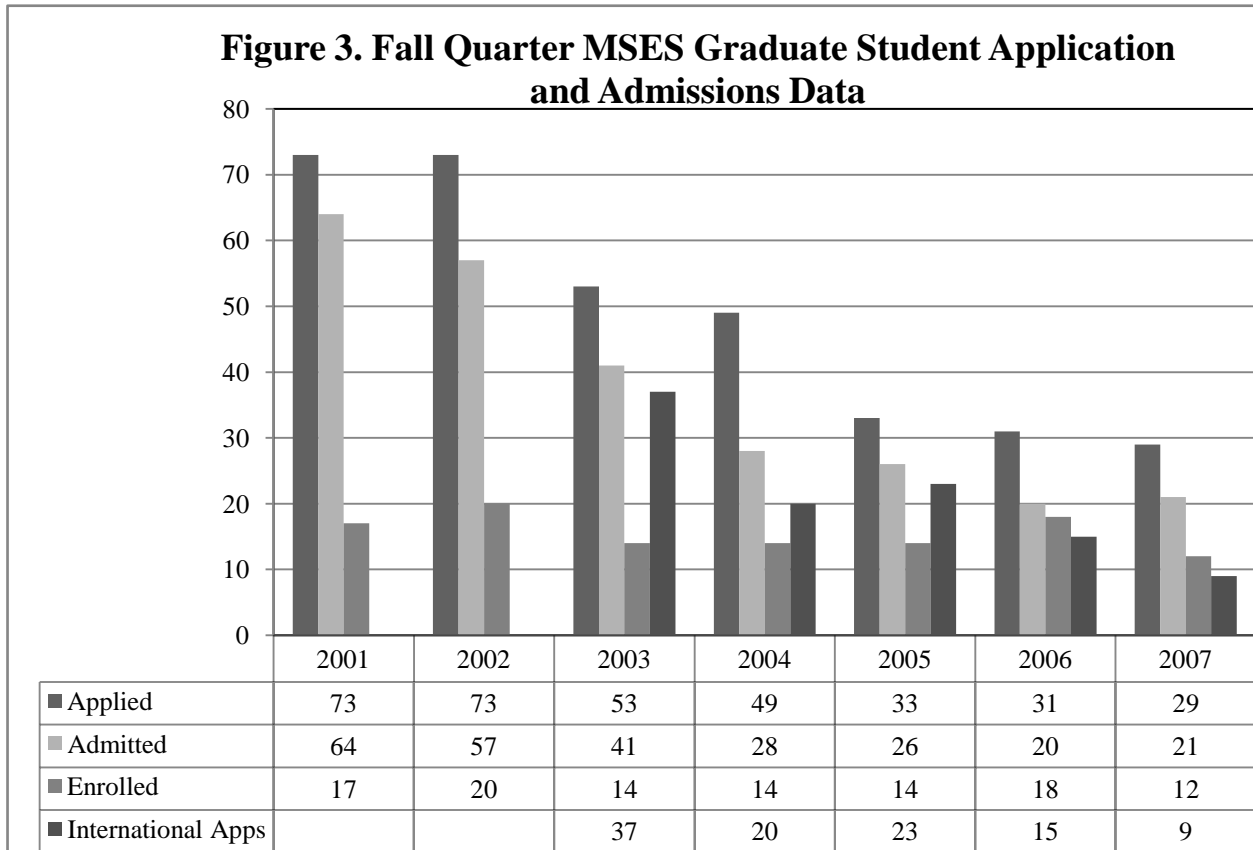
Transcripts of undergraduate work and three letters of recommendation are required with admission application. In addition, students are required to write a letter of intent that emphasizes

their skills, career direction, and environmental research interests, and identifies three OU faculty members who may be appropriate for their advisory committee. Graduate Record Examination (GRE) scores are not required, but will be considered if submitted. Test of English as a Foreign Language (TOEFL) written scores of 600 or computer scores of 250 are required and Test of Written English (TWE) scores of 60 are recommended for international students.

The minimum undergraduate grade point average (GPA) necessary for unconditional admission is 3.0/4.0. Some students with a GPA between 2.8 and 3.0 may be admitted conditionally, but must achieve a 3.0 GPA in their first 15 hours of graduate coursework, and are not eligible for financial support until their admission status has changed to unconditional. The average GPA of students enrolled in the MSES is about 3.5.

Since 2001, the number of students who have submitted applications to the MSES degree has declined by more than 50 percent. However, as Figure 4 shows, the number of students enrolled in the program has remained relatively stable, averaging about 15 students per year. As with most graduate programs, the major constraint with admission has to do with available and competitive student funding.

In examining the decline in applications to the program, one explanation immediately surfaces. Since 2002, the number of international students applying for the MSES has declined significantly. According to Graduate Studies, 50 international students applied to the MSES program in the 2003-04 academic year (all quarters); by 2008-09 the number of international student applications has dropped to 15 (for all quarters). In 2002, 24 of the 56 (42.8%) MSES students on campus in the fall were international students. In 2007, 9 of the 37 (24.32%) MSES students were from outside of the United States.



The admissions statistics do not tell the whole story of the impact of the Environmental Studies program on campus. In looking at number of majors in interdisciplinary programs as compiled by the Office of Institutional Research (Table 2), it is clear that the Environmental Studies program plays a major role in ensuring that the University is accomplishing its interdisciplinary goals. Although fall quarter headcount enrollment has declined since 2001, majors in Environmental Studies consistently comprise the significant percentage of interdisciplinary students on campus.

Table 2. Fall Quarter Headcount Enrollment by Interdisciplinary Major  
(Source: Institutional Research)

	2001	2002	2003	2004	2005	2006	2007
Social Science	4 (4.35%)	8 (7.34%)	10 (8.93%)	8 (6.15%)	2 (1.55%)	20 (15.15%)	22 (15.71%)
Molecular/Cellular Biology	0 (0%)	0 (0%)	4 (3.57%)	30 (23.08%)	31 (24.03%)	31 (23.48%)	26 (18.57%)
Environmental Studies	59 (64.1%)	56 (51.38%)	52 (46.43%)	38 (29.23%)	41 (31.78%)	33 (25.00%)	37 (26.43%)
Integrated Engineering	25 (27.17%)	26 (23.85%)	26 (23.21%)	24 (18.46%)	25 (19.38%)	22 (16.67%)	22 (15.71%)
Individualized Instruction Programs	4 (4.35%)	19 (17.43%)	20 (17.86%)	30 (23.08%)	30 (23.26%)	26 (19.70%)	33 (23.57%)
Total	92	109	112	130	129	132	140

Student Profile. Students who are accepted into the program come from a variety of backgrounds, but all students are high achievers. The average GPA of students who were admitted to the program between 2001 and 2007 was 3.5. The average GPA of students who graduated from the program from 2001 to 2007 ranges from 3.62 to 3.74. In addition, the MSES program has hosted several international students who were supported by competitive fellowships, including the following:

- Alexander Sharabaroff (2006-08), Belarus, Muskie Fellow
- Ana Mojica Bonilla (2006-08), El Salvador, Fulbright
- Jahan Batyrova Kariyeva (2006-08), Turkmenistan, Muskie Fellow
- Chansouk Insouvanh (2005-07), Lao, Fulbright
- Misak Avetisyan (2004-06), Armenia, Muskie Fellow

Graduates. One of the most difficult activities for any academic program is keeping track of its graduates. This is especially difficult in an interdisciplinary program where student advisors are from multiple departments. Alumni of the Environmental Studies program find jobs

in the public and private sector and at universities. Some examples of activities of recent MSES alumni include:

- Jonathan Steele (2004), Program Coordinator, U.S. Department of Interior.
- Basith Mohammed (2002), Project Manager, Handex Consulting and Remediation.
- Bian Lui (2002), post-doctoral research fellow, Harvard University.
- Misak Avetisyan (2006), Ph.D. Student, Purdue University.
- Leon Kappler (2003), gas chromatography and mass spectrometry analyst with CT&E Environmental Services in Ludington, Michigan.
- Jamilah M’Nuh (2004), received the 2002 Margaret McNamara Memorial Fund grant of \$11,000. Hired as a researcher with LEAD, a program of The Foundation for Sustainable Development in Jakarta, Indonesia.
- Jennifer Last (2001), executive director of the Nanticoke Watershed Alliance, an alliance of watershed protection groups located in Nanticoke, Maryland.
- LeAnne Marks (2004), sustainability officer at a town planning, urban design and land surveying company in Brisbane, Australia.

### **Program Summary**

The Environmental Studies program plays a critical role in the mission of Ohio University. It does this through high quality graduate and undergraduate curricula that rely on interdisciplinary collaboration to enhance student understanding of the environment. In addition, new initiatives that focus on using the environment as an integrating theme in multidisciplinary courses, highlight the potential of this program to continue to make substantial contributions to *Vision Ohio* goals.

Program Strengths. In December, 2007, the ESAB identified the following strengths of the Environmental Studies program:

- The ES program is a high quality program in which students get individual attention.
- There is a group of very dedicated faculty who work with the students.
- The students who pursue the MSES degree and the ES UG certificate are very passionate about the environment and they really want to make a difference.
- The MSES program is flexible enough that it can maintain its relevance without major institutional oversight.
- The opportunities for growth of ES program on campus are virtually unlimited.
- The ES program is very inclusive and students from a variety of backgrounds are involved.
- The board is an extremely dedicated group of faculty.

In addition to these strengths, it is clear that this program can increase the national prominence of Ohio University in its innovative initiatives and its increasing emphasis on environmental sustainability and leadership.

Weaknesses and Recommendations. Despite the significant impact that the program has on the mission of Ohio University, the program is often not recognized by the university as a major course of study. This problem became evident in compiling data for this self study. Sometimes MSES students are identified as interdisciplinary majors, other times they are explicitly identified according to their major code. This is most likely due to the fact that Environmental Studies is not a department. Nevertheless, if the University is truly committed to interdisciplinary academic programs, then data should be collected that can highlight the impact of these programs.

The faculty configuration of the program is another issue that must be discussed. As this report highlights, the majority of faculty currently involved with the program do so because of their interest in environmental research and for the opportunity to work with students who share a passion for the environment. However, a lack of incentives for these faculty members, combined with increasing concerns regarding faculty workload, suggest that it may become progressively more difficult to maintain a base of dedicated faculty within the Environmental Studies Program.

Even though MSES students are in an interdisciplinary program, many of these students end up working with a specific faculty member in another academic unit. Since, there is no office space available to MSES students, it is often necessary for these students to rely on their advisor for office space and computer access. In addition, there is no space for these students to convene for discussion and community-building. This sometimes contributes to MSES students feeling as if they are not part of any specific academic unit at the University. We have tried to address this situation by creating at least two opportunities per quarter for students to meet; one luncheon and one lasagna dinner. One additional scenario to rectify this situation is to identify a graduate student office for MSES students.

Finally, under the current administrative structure, the Environmental Studies Program is at full capacity. It will be difficult to initiate any further curriculum enhancements, external grant activity, and student recruitment efforts without additional personnel. There are several staffing scenarios that can be discussed to address these needs.