

UNIT REPORT

**Environmental Science-Academic - APR Self-Study
Report by Academic Unit/Department**

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Program Mission

New Program Mission Item

Program Mission Statement:

The Environmental Science Program at the University of Idaho serves the state of Idaho, supports the University's land-grant mission, and educates students to be well informed global citizens. Our graduates understand the human and natural dimensions of environmental science necessary for sustainably managing natural resources and the environment in our highly dynamic world. The Program takes a holistic approach to environmental science by providing coursework in the biological, physical, and social sciences, and humanities, combined with research experiences that push the frontiers of environmental knowledge.

Program Goal (add a minimum of 3 program goal "plan items")

New Program Goal #1: Program-wide assessment communication

Goal Statement:

The Environmental Science Program is a university-wide program that currently includes 114 affiliated faculty. Representing these faculty is a group of 9 core faculty from across each participating college in the university. At this point, the core faculty have discussed and approved the existing mission statement and program goals for this assessment cycle.

This program goal is to discuss further the ENVS Mission and Goals moving forward with the broader ENVS faculty, for further development and refinement (as necessary) in next assessment reporting cycle.

Alignment to UI Strategic Plan Goals: Transform (Goal 3): Increase our educational impact.

Indicators/Metrics to Evaluate Progress:

1. Attendance at program-wide faculty meeting to discuss mission and goals.
2. Results of faculty vote for new mission and goals adoption.

List of Actions the Program Will Take to Achieve Goals :

1. Conduct faculty wide meeting of affiliated faculty to discuss and refine mission and goals.
2. Vote to adopt mission and goals.

Goal Achievement Level: In Progress

New Program Goal #2: Increase enrollment in Environmental Science Online programs

Goal Statement:

Increase support of ENVS students located away from UI main campus, with particular priority areas of the Treasure Valley/Boise, Idaho Falls, and Coeur d'Alene. Strategies will include increasing our online course offerings and building our online community of learners.

Alignment to UI Strategic Plan Goals: Transform (Goal 3): Increase our educational impact.

Cultivate (Goal 4): Foster an inclusive, diverse community of students, faculty, and staff and improve cohesion and morale.

Indicators/Metrics to Evaluate Progress:

1. Enrollment of online students in Environmental Science Program (BS and MS)
2. Number of student credit hours taken by online students in ENVS
3. Number of courses offered for virtual and online delivery with relevance to the Environmental Science

List of Actions the Program Will Take to Achieve Goals :

1. Increase coordination among staff and faculty in Idaho Falls, Boise, Coeur d'Alene, and Moscow to build our statewide Environmental Science team.
2. Offer new 500-level ENVS research methods course.
3. Make new ENVS faculty hire in Idaho Falls focused on the topic of Energy and the Environment
4. Increase online community building events such as virtual student orientations, networking, and professional development opportunities

Goal Achievement Level: In Progress

New Program Goal #3: Supporting UI Sustainability Initiative

Goal Statement:

Coordinate ENVS Program with UI Sustainability Initiative.

Alignment to UI Strategic Plan Goals: Innovate (Goal 1): Scholarly and creative products of the highest quality and scope, resulting in significant positive impact for the region and the world.

Engage (Goal 2): Suggest and influence change that addresses societal needs and global issues, and advances economic development and culture.

Transform (Goal 3): Increase our educational impact.

Cultivate (Goal 4): Foster an inclusive, diverse community of students, faculty, and staff and improve cohesion and morale.

Indicators/Metrics to Evaluate Progress:

1. Number of sustainability-related meetings attended by ENVS staff and faculty
2. Number of ENVS students who pursue internships with the UI Sustainability Center
3. Number of ENVS courses that address sustainability topics

List of Actions the Program Will Take to Achieve Goals :

1. Further develop internship opportunities with UI Sustainability Center
2. Host seminars on the topic of sustainability
3. Participate in the UI sustainability initiative

Goal Achievement Level: In Progress

Student Learning Assessment Report (add one "plan item" for each major, degree, and/or certificate offered by dept)

ENVS MS non-thesis

Assessment Report Contact: Lee Vierling

Program Changes in Past Year:

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

Complete 2021-10-06 3:20 PM Elise Kokenge ekokenge@uidaho.edu 2021-10-06 3:20 PM Elise Kokenge ekokenge@uidaho.edu Anonymous Self Report Student 75 75.00% Very Good

Complete 2021-10-06 3:21 PM Elise Kokenge ekokenge@uidaho.edu 2021-10-06 3:21 PM Elise Kokenge ekokenge@uidaho.edu Anonymous Self Report Student B 50 50.00% Very Good

Summary of Student Learning:

The ENVS Non-Thesis Program had an anonymous Qualtrics exit survey for graduating students to self-report their experience. These data were transferred to Anthology manually.

Summary of Faculty Discussion:

Summary of Changes/Improvements Being Considered:

Inter-rater Reliability:

Closing the Loop:

ENVS MS Thesis

Assessment Report Contact: Lee Vierling

Program Changes in Past Year:

We have implemented new courses at the graduate level to help serve our MS Thesis student population. These courses include NRS 555, ENVS 511, and several experimental courses.

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment: NA

Import Outcomes Data (from Anthology Outcomes):

4.

Communication Skills

Student will be able to communicate effectively, professionally, and within group settings.

Academic Year 2020-2021: Environmental Science (M.S.)

Term: Overview

Exceeded		0%	0
Met		100%	2
Partially Met		0%	0
Not Met		0%	0

Summary of Student Learning:

Summary of Faculty Discussion:

The ENVS Core Faculty has discussed the health of the MS thesis program based on enrollment numbers alone. These numbers are within the historical range of variability so on the surface the program did not feel that significant changes were needed.

Summary of Changes/Improvements Being Considered:

Not applicable at this time.

Inter-rater Reliability:

Closing the Loop:

We have not yet taken a full look at this program.

Attached Files

[MS-PhD-Survey \(5\).docx](#)

ENVS PhD

Assessment Report Contact: Lee Vierling

Program Changes in Past Year:

Learning Outcomes are Communicated to All Students in Program (check box if true): true

Learning Outcomes are Communicated to All Faculty (check box if true): true

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

4.

Professionalism

Student will be able to demonstrate advanced effectiveness and professionalism in communications as an individual and within team settings.

Academic Year 2020-2021: Environmental Science (Ph.D.)

Term: Overview

Exceeded		100%	1
Met		0%	0
Partially Met		0%	0
Not Met		0%	0

Summary of Student Learning:

Summary of Faculty Discussion:

Summary of Changes/Improvements Being Considered:

Inter-rater Reliability:

Closing the Loop:

Attached Files

[MS-PhD-Survey \(5\).docx](#)

Environmental Science BS

Assessment Report Contact: Lee Vierling

Program Changes in Past Year:

The Environmental Science undergraduate curriculum underwent a complete revision in the past year, and is now offering a new suite of five degree options. These degree options include four that are offered in person, and one online option, which is available 75% online and 25% in partnership with other colleges located near the student.

This curriculum revision was accompanied by a suite of approximately 25 related course changes, which all have passed UCC and now have been implemented to support the new BS program as well as to further support the MS and PhD programs.

Learning Outcomes are Communicated to All Students in Program (check box if true): false

Learning Outcomes are Communicated to All Faculty (check box if true):

Optional: Framework Alignment:

Import Outcomes Data (from Anthology Outcomes):

The outcome import did not seem to work so I will enter the outcome assessment manually here.

We assessed the Problem Solving outcome using results from our Capstone Research Project course.

8 students exceeded expectations, 5 students met expectations, and 0 students did not meet expectations in Spring 2021.

Summary of Student Learning:

Because we are in the first year of our new curriculum, we have not yet met as a faculty across the entire University-wide program to discuss these findings as there are 114 faculty affiliated with the program. However it does appear that all students who undertook the capstone research project experience, designed to assess the Problem Solving outcome, met or exceeded expectations for the program.

Summary of Faculty Discussion:

Because we are in the first year of our new curriculum, we have not yet met as a faculty across the entire University-wide program to discuss these findings as there are 114 faculty affiliated with the program.

Summary of Changes/Improvements Being Considered:

We will meet as a faculty to discuss this outcome and to evaluate whether the assessment is adequate. In the next reporting cycle we will also include reporting from our team-based capstone course, ENVS 476 (Environmental Project Management and Decision Making), which is now being offered as a new option for students wishing to complete their capstone in a team based course rather than in an individual-based research course (ENVS 497).

Inter-rater Reliability:

Each year the capstone courses are taught by the same faculty. If the rubric changes, or if the faculty teaching the courses change, we will have a meeting to discuss expectations and the fact that as an indicator experience for the program, it is important to give consideration to the reliability of the assessment in the context of program wide learning outcomes.

Closing the Loop:

As mentioned above, the Environmental Science Program has recently revamped our undergraduate curriculum. This included adding a team-based capstone course option to the previous independent research project option. The ENVS faculty felt that adding a team based option was an important step because we have received feedback from employer stakeholders and program alumni that applied, team-based project experience is very important for career preparation. We look forward to assessing our student performance in these two capstone courses together in coming years to help understand if providing these two options is resulting in a change in student success.

Student Achievement

New Student Achievement Item

Student Retention:

Unfortunately dashboard data do not exist for retention, this may be a result of us having just started a new curriculum for the Environmental Science Program. That said, we do monitor student retention in one way by comparing our Fall Semester-to-Spring Semester enrollment numbers, and benchmarking these numbers against the UI-wide average change in student enrollment from Fall to Spring.

In looking at these numbers, the UI has an average Fall-Spring enrollment loss number of approximately 8%. This means that due to winter graduation and other attrition factors, on average the enrollment at UI is 8% less in Spring compared to the preceding Fall semester. The ENVS undergraduate program Fall-Spring loss rate has varied in this manner over the past five years:

2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	% Fall-Spring Loss
7.1	9.2	22.1	27.7	9.8	ENVS
7.9	6.7	8.3	8.3		UI Average

As one can see, the ENVS loss rate changed from being below (better than) the average UI loss rate in 2016-17, to rising in each of the following years, with a rate that was more than three times the UI average (27.7% vs. 8.3%) in 2019-2020. This was a very alarming statistic. The program underwent several changes between AY 19/20 and AY 20/21, and has put a strong emphasis on student satisfaction including improved advising, community building opportunities, and better customer service relating to email responses to student inquiries, etc. The data show that these efforts began to take immediate effect, reducing the loss rate from 27.7% to 9.8%. In Fall 2021, the Program initiated a new majors-only course for all incoming freshmen and transfer students to take, with the goal of increasing retention further to the point that the Program loss rate is lower than the UI average.

Student Persistence:

The Program did not monitor this metric in the past year and it appears that no dashboard data are available; this may be a result of us having just started a new curriculum for the Environmental Science Program.

Student Completion:

The Program did not monitor this metric in the past year and it appears that no dashboard data are available; this may be a result of us having just started a new curriculum for the Environmental Science Program.

Student Postgraduate Success:

The Program did not monitor this metric in the past year and it appears that no dashboard data are available; this may be a result of us having just started a new curriculum for the Environmental Science Program.

Identify Equity Gaps:

The Program did not monitor this metric in the past year and it appears that no dashboard data are available; this may be a result of us having just started a new curriculum for the Environmental Science Program.

Effective Learning Environment and Closing Equity Gaps:

The Program Director leads this effort due to it being a University-wide program. As a result of the University-wide status, most faculty who are affiliated with the program serve ENVS in a secondary capacity, with their home department being their primary responsibility (the exception is the Natural Resources and Society Department, who discontinued their degree program in 2021 to focus fully on supporting the ENVS program).

In 2020-21, the Director undertook the following steps to ensure an effective learning environment and to support closing equity gaps:

1. With ENVS faculty across campus, redesigned entire ENVS curriculum to increase learning experience and equity of course access. New curriculum took effect in Fall 2021;
2. Communicated with all department heads across UI to confirm that courses their unit taught in the ENVS curriculum would continue to be offered, including whether the courses would be offered in-person and/or online;
3. Implemented the ability of students to pursue a minor or certification as part of the ENVS Integrated Sciences degree. This helped safeguard students who wished to gain a depth of experience in a particular subject but could not find enough courses to satisfy this desire (this was a recurring problem in the previous version of the ENVS curriculum);
4. Met monthly with ENVS Core Faculty representing all colleges participating in ENVS to solicit program feedback;
5. As a result of student and alumni feedback, in Fall 2021 launched new ENVS 201 Careers in the Environmental Sciences core course to serve majors in their first semester as a community building and field based course;
6. Worked with Honors Program Director Sandra Rieneke to begin offering honors sections of three ENVS courses in 2021-22 (ENVS 101, 102, and 225);
7. Developed new 4-year professional advising model to limit advising transitions and increase institutional knowledge of campus-wide course offerings to assist students with navigating new curriculum. Faculty will make the transition to a career mentoring function rather than advise on course selection.

Demand and Productivity

New Demand and Productivity Item

External Demand:

The following are fall enrollment trends for ENVS since 2009-10:

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022 (prelim)
Fall enrollment	134	152	149	131	103	106	114	121	131	138	120	112	123

We are encouraged that our enrollment level (123) is currently near the median of the range of student enrollments over this period (range: 103-152). ENVS faculty recently conducted the first comprehensive revision of our curriculum since it was first offered in the year 1993. This revision included feedback from external stakeholders such as alumni and employers. The new option areas reflect the external feedback combined with current student and faculty input.

We have not yet analyzed completion rates.

Internal Demand:

The Program did not monitor this metric in the past year and it appears that no dashboard data are available; this may be a result of us having just started a new curriculum for the Environmental Science Program.

Credit Productivity:

The Program did not monitor this metric in the past year and it appears that no dashboard data are available; this may be a result of us having just started a new curriculum for the Environmental Science Program.

Financial Health and Resources

New Financial Health and Resources Item

Financial Health:

Because ENVS is a university-wide program, we depend upon the talents and expertise of faculty, staff and administrators across UI to be successful. Therefore, to some degree, the financial health of UI directly impacts ENVS and in recent years we have seen a large contraction of our budget. With ENVS now being administered by CNR, the Director is in a position to directly connect some faculty involvement in the ENVS program with the individual-based annual review and incentive process (specifically NRS faculty, who now fully support ENVS). This provides more agency with which to pursue unfunded initiatives.

I am hopeful that the UI administration will approve funds to re-hire the ENVS faculty position based in Idaho Falls. This position has been vacant since the passing of the previous ENVS faculty located in Idaho Falls. This faculty position is important for student advising, online teaching, and collaborating on research with the Idaho National Lab, a premiere location for research involving clean energy and related environmental topics.

The ENVS graduate program has seen tremendous growth in the past year, with the non-thesis MS program alone growing from 47 to 108 students from Fall 2020- Fall 2021, an increase of 129% in one year. This has brought strains to the program to provide enough online courses and project advising opportunities for these MS students. In particular, we need a model to incentivize faculty participation in MS non-thesis project advising. Revenue returns to reinvest in the program growth would be very helpful, for example.

With the new Vandal Budget Model implementation, it is important that university-wide programs have a seat at the table to help form policies that support collaboration. For example, we need a budget metrics sharing model that is:

- 1) fair and equitable;
- 2) simple to explain and understand;
- 3) straightforward to implement, monitor, and track;
- 4) fuels collaboration and growth to strengthen UI; and
- 5) supported by directors, department heads, and deans so that faculty effort is encouraged and rewarded.

Efficient Use of Resources:

The program has increased the efficient use of resources in many ways over the past two years. The director position now serves also as the Department Head of Natural Resources and Society, which has reduced the number of administrators from 2 to 1. The program now integrates with the CNR Director of Graduate Studies office to streamline graduate student admissions and advising functions. This collaboration has helped to markedly increase ENVS graduate enrollment.