

Instructional Program Review Report

Sierra College, 2018-19

Department/Program Name: Environmental Studies & Sustainability (ESS)

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Ideally, the writing of a Program Review Report should be a collaborative process of full-time and part time faculty as well as all other staff and stakeholders invested in the present and future success of the program at all sites throughout the district. The Program Review Committee needs as much information as possible to evaluate the past and current performance, assessment, and planning of your program.

Please attach your Department Statistics Report (DSR) and your planning report with your Program Review.

1) Relevancy: This section assesses the program's significance to its students, the college, and the community.

1a) To provide context for the information that follows, describe the basic functions of your program.

The Environmental Studies and Sustainability program at Sierra College provides students with the opportunity to meet the requirements to transfer to four-year colleges in the environmental fields including Environmental Studies and Environmental Science. Students can earn an AS Degree in ESS or simply take GE and CSU/UC transfer courses in the program.

The ESS Department is also involved in Campus Sustainability & Outreach. We have historically hosted Sustainability Forums (open to the public), were involved in the campus-wide Sustainable Action Plan Committee (one-year focus on Facilities and Operations), offered a Community Education Sustainable Living Series (courses on topics such as solar basics for homeowners and local foods and nutrition), and are actively involved in Earth Week, People and Culture Days, Love Your Body Week, social justice programs, ASSC and other campus activities.

The program is designed to impart students with the following: the ability to understand and apply the scientific principles involved in environmental studies; the ability to understand and apply social science concepts involved in solving environmental issues; a basic understanding of the nature of sustainable practices; the ability to integrate and communicate science and social science data with integrity and reason; an understanding of basic political processes at the local, national and global levels.

Students will have a basic knowledge of the natural and earth sciences and the social sciences as they apply to environmental issues. Students will: be able to integrate knowledge of natural and social sciences in addressing environmental issues; solve problems by suggesting a workable solution to a problem through identifying the issues, analyzing evidence, and weighing alternatives; understand the importance of environmental stewardship in appreciating and caring for the natural resources of the Earth; have an understanding of and sensitivity to differing cultural viewpoints on environmental issues; understand the importance of ethics and will demonstrate ethical behavior.

1b) How does your program support the district mission, as quoted below?

“Sierra College provides an academic environment that is challenging and supportive for students of diverse backgrounds, needs, abilities, and goals with a focus on access, equity, student-centered learning, and achievement. The college is committed to practicing diversity and inclusion, and recognizes that a diverse and inclusive curriculum and workforce promotes its educational goals and values. Institutional learning outcomes guide the college’s programs and services, encouraging students to identify and expand their potential by developing knowledge, skills, and values to be fully engaged and contributing members of the global community. Sierra prepares students by offering Associate’s and transfer degrees, certificates, career and technical education, foundational skills, as well as lifelong learning and enrichment.” [update]

Please include an analysis of how your program supports ISLOs (Institutional Student Learning Outcomes): Communication, Technology and Information Competency, Critical and Creative Thinking, and Citizenship? [we could make this a separate question]

“...provides an academic environment that is challenging and supportive for students of diverse backgrounds, needs, abilities, and goals with a focus on access, equity, student-centered learning, and achievement...”

- The ESS program is a truly interdisciplinary program at Sierra College with core required courses from 5 disciplines and 2 divisions, and elective courses from even more.
- Courses include group work, project-based learning, lab and field activities, collaboration, Socratic lectures and other interactive strategies, with a goal to increase student engagement and learning.
- Students are encouraged to build upon the diverse backgrounds and strengths they each bring to the classroom in order to build more well-rounded, inclusive, and equitable solutions to environmental challenges.

“...committed to practicing diversity and inclusion, and recognizes that a diverse and inclusive curriculum and workforce promotes its educational goals and values.”

- Course topics and case-study examples are selected to represent diversity of nationality, ethnicity, gender, income, etc. in order to both raise awareness for students who have not been exposed to the experiences, cultures and values of other groups and to be more relatable for and representative of historically underrepresented groups. Each semester we try to increase this diversity through intentional lesson planning.
- Student diversity in the ESS program is in need of improvement, with almost ¾ of students identifying as white, for example. We address this in section 3 of this report.
- Most of the underrepresented groups who do participate in the ESS program have average or above-average success and retention, with the exception of a few groups. (see section 3)

“...encouraging students to identify and expand their potential by developing knowledge, skills, and values to be fully engaged and contributing members of the global community.

- Seven general education courses (ESS 1, 1L, 6, 7, 8, 10, 14) introduce students to a wide breadth of information in the Environmental Studies and Sustainability field and often lead to students changing academic focus after being exposed to new ideas. (Based on anecdotal evidence of instructors being told by students that they changed their major to ESS or another related science or social science after taking an ESS class).
- Courses such as ESS 01, 06, 10, 14 and 95 provide students with opportunities to learn about and engage with non-governmental and governmental organizations including Sierra Streams Institute, Placer Land Trust, Placer Nature Center, Sierra Fund, Sierra Business Council, Sierra Nevada Alliance, US Forest Service, National Park Service, California State Parks, California Department of Water Resources, the U.C. Division of Agriculture and

Natural Resources, Dry Creek Conservancy, Friends of Auburn Ravine and others through guest speakers, volunteer activities and internships.

- ESS students are exposed to and learn about local, regional and global environmental systems and challenges, and often seek out ways to be more actively involved in bringing about change.

“...Sierra prepares students by offering Associate’s and transfer degrees...”

- The ESS program offers 9 courses and one AS degree that allow students to transfer to a 4-year university. We are considering offering a second (AA) degree.

The five ESS PSLOs directly relate to all Sierra College ISLOs:

Communication: ESS students must use active reading skills to comprehend and interpret information and ideas from a variety of texts, including academic prose technical documentation and media sources. They must communicate thoughts, ideas, and information effectively in writing in a variety of modes and for a variety of purposes using logic, reasoning, and effective rhetorical strategies as well as correct grammar, spelling, punctuation, diction, style, and format. Students must demonstrate active listening skills in classroom situations and interact with individuals from various backgrounds. Students must effectively communicate thoughts, ideas, and information orally to peers and instructors and occasionally to the larger campus community.

Technology and Information Competency: ESS Students are required to efficiently and accurately use current computer and other relevant technologies to acquire, process, and present information, and organize and maintain records. They use computer applications and other technologies in the learning process and real-world scenarios. Students must recognize the need for information; choose and narrow topic; formulate search questions; and gather, organize, and discriminate among various sources of information. They must also filter information for relevance and accuracy, apply criteria to determine credibility, and utilize data gathered to draw conclusions. Students must collect, graph and analyze data for precision, accuracy, statistical significance, among other things. Results must be presented clearly and accurately.

Critical and Creative Thinking: Due to the interdisciplinary nature of the ESS curriculum, ESS students must identify and understand questions or problems across disciplines and in practical applications. They must develop hypotheses for various environmental issues, investigate and assess the validity or relevance of arguments, claims, or contentions supported by data, observation, experience, testing or analysis, distinguish fact from opinion, and develop an interpretation with an awareness of different views and reasoning. Students must use sound reasoning to specify solutions and consequences and test hypotheses using the scientific method. Students must design sound scientific experiments, formulating hypotheses, identifying dependent, independent and confounding variables, determining materials and methods, collecting, interpreting and analyzing data, and solving problems and crossing hurdles when met, both in lab and field settings. In certain ESS classes, students also acquire an appreciation for the creation of works of fine art, craft, music, drama, and/or culture. Students may participate in in games, dance, performance art and outdoor pursuits based on individual interests and capabilities.

Citizenship: ESS Students develop and apply ethical reasoning and decision-making skills as related to complex environmental topics, with emphases on civility, empathy, interpersonal competence, social responsibility, and collaborative conflict resolution. Students must recognize, understand, and respect diversity when analyzing local, national and global environmental issues. Developing values and behaviors that respect the natural environment is core to ESS, as is evaluating social justice issues, identifying social responsibilities to elicit social change, and recognizing the ethical implications of political, social, and economic institutions. Course work includes accepting personal responsibility by recognizing oneself as a cause for opportunities and experiences, self-motivation through planning and acting to accomplish goals, and recognizing the value of life-long learning.

1c) Program offerings align with which of the following mission categories; check all that apply:

- Transfer Career Technical Education
 Basic Skills Personal Development/Enrichment Lifelong Learning

1d) Please analyze your department's performance in supporting the mission categories marked in 1c above. Please provide evidence in support of this analysis, including data from the dashboard relevant to this evaluation; relevant data includes the equity and diversity goals of the department and College.

If any of the following apply to your program, please address them in your analysis.

- Degrees, certificates, and/or licenses your department has generated:
 - The alignment of these awards with the district's mission and/or strategic goals. (See the district "Awards Data File, available from Research and Planning, for your numbers).
- Job placement or labor market information for your program's awards and licenses.
- The contribution your program makes to student transfer.
- Participation in basic skills programs.

The ESS Program aligns beautifully with the Sierra College Vision Statement ("We will challenge ourselves and our community to become fulfilled citizens in a global environment by contributing to and engaging in the thoughtful application of knowledge guided by respect for others and the world in which we live.") by providing high-quality transfer-level courses that challenge students toward a better understanding of the environmental processes that sustain life on earth and the role that humans play in utilizing, preserving, enhancing, degrading or exploiting those resources. Courses require an understanding of sustainable environments, societies and economies. The ESS Program also aligns with all eight of the Sierra College Core Values. See 1e for more.

Number of Majors: The number of ESS majors is holding relatively steady at an average of 136 per semester.

Number of Degrees: Eight ESS AS degrees have been awarded in the last three years. Most students in the program will be working toward a 4-year degree and will not get an AS in ESS, as the requirements are very difficult to obtain in two years. More ESS majors obtain a Natural Science Associates upon graduation and transfer or simply transfer without obtaining an associate's degree. The department does not currently know who many students do one of the above, and how many leave school for work, family or other reasons.

ESS courses required (*elective) for other programs:

- BIOLOGICAL SCIENCES – AS Degree: ESS 01*
- ENERGY TECHNOLOGY – AS Degree: ESS 01, ESS 07, ESS 10*.
- NATURAL SCIENCE – AA or AS Degree: ESS 01*, 01L*, 07*, 08*, 10*, 14*
- WATERSHED ECOLOGY – AS Degree or Certificate of Achievement: ESS 13, ESS 01*, ESS 08*, ESS 10*

Student Transfer: We do not currently know how many ESS majors are transferring. As of the last Program Review cycle, approximately 25% of the students who declare ESS as a major were transferring to a 4-year university directly after their last semester at Sierra. It is not known what happened to the other 75% of students; they may go into the workforce, transfer to another 2-year college or something else.

- 1e) Optional Additional Data: Describe any other relevant contributions of your program to the district mission, goals, outcomes, and values not incorporated in the answers above. Examples include but are not limited to contributions to student equity and success, diversity, campus climate, cultural enrichment, community ties, partnerships and service, etc. Include specific data and examples.

Optional comments here:

Core Values 1-8:

1. Support and model excellence in teaching, learning, scholarship, and creativity.
2. Provide the tools for continuing success in an ever-changing world.
3. Provide and demonstrate the value of an inclusive and equitable community.
4. Demonstrate collaboration in decision making.
5. Foster active citizenship in our community, our nation, and our world.
6. Create and nurture meaningful connections to our community.
7. Recognize that students are active participants in their education.
8. Support and demonstrate the sustainable use of all resources.

- ESS program is actively involved in Earth Days in the spring semester and People and Culture Days in the fall, which both incorporate diverse perspectives, a breadth of academic departments and clubs, arts, culture, and community involvement into active student participation and enhancement.
- ESS students are encouraged to engage in civic activities such as participating in watershed cleanup days, volunteering at NGOs, etc. Organizations where regular partnerships occur include the Placer Land Trust, the Sierra Nevada Conservancy and the Sierra Streams Institute.
- ESS has been actively involved in bringing forums and films to the campus community including the international Wild and Scenic Film Festival and Water Forum to address drought issues, both of which are held in Dietrich Theater and bring in students, staff, faculty and community members.
- ESS is involved in the Natural History Museum Committee, a standing committee of the Academic Senate. The Natural History Museum has been ranked as one of the top 30 natural history museums on a college campus in the nations and was the only 2-year school on the list!
- ESS students and faculty are involved in development and outreach activities outside the surrounding community, including the annual Sustainability Conference at CSU Chico and Greenfest in San Francisco.
- ESS program is striving to become more equitable and inclusive.

Core Value #8: “Support and demonstrate the sustainable use of all resources.”

- The ESS Program has been closely tied to the activities of both the Sustainability Action Planning (SAP) Process and the Sierra College Sustainability Forum (SCSF).

Institutional Outcomes:

- ESS courses require that students apply broader institutional outcomes of communication and critical thinking while more specifically focusing on citizenship (ethics, diversity, sustainability, global awareness, and personal responsibility) in certain classes such as ESS 01 and 10.

The ESS program has a wide reach, with courses offered on the Rocklin, Nevada County, and Truckee.

- 2) Currency: This category assesses the currency of program curricula as dictated by Title 5 and the currency of efforts in meeting accreditation standards as well as improving pedagogy and engaging in professional development.**

2a) Curriculum: Comment on the currency of your program's curricula, including discussion of any recent or projected changes. Please describe your process and the criteria, including state and/or professional mandates, for evaluating and revising curriculum, including the use of SLOs.

As relevant, please address the impact of the development of MAPs, Interest Areas, and Guided pathways on curriculum and program planning and assessment

All ESS course curricula are current.

Since the last Program Review cycle, three new ESS courses have been created:

- ESS 01L: Introduction to Environmental Science Lab (1-unit, 3-hrs/week),
- ESS 06F: Sierra Nevada Field Trip (0.5 unit), and
- ESS 08: California Water (4-units, 3hr lecture, 3-hr lab / week).

These courses were developed to meet student interest, improve student learning outcomes, and better align with transfer institutions. All of these courses were added to the list of elective courses for the ESS AS degree.

We have also made several additional changes to the AS degree

- We added CHEM 01A (or CHEM 03A & 03B) to the required courses. This course is required to enroll in BIOL 01 (a required course for the AS), but many students were falling behind on their academic goals because they were not aware of the chemistry pre-rec.
- Students were given a choice to complete either ESCI 01 or GEOG 01 as a required course. Previously they could only take ESCI 01, but upon review of transfer institution requirement on ASSIST, as well as review of the GEOG 01 curriculum, it was clear that a choice was more appropriate for our students.

The field of ESS is ever changing, as environmental conditions change and technologies and scientific research advance. Therefore, it is imperative that course content remains current and relevant. Course textbooks are reviewed by the department on an annual basis and updated as necessary. Courses at other colleges and universities are also regularly reviewed to ensure that Sierra College is offering the most relevant course offerings and content for our students who plan to transfer. SLO data are reviewed, and if necessary, curriculum will be adjusted if learning outcomes are not being met.

Curricula are reviewed and modified by department chair and appropriate faculty and deans when updates and revision are necessary.

Scientific journal articles and current events are reviewed weekly and shared within the department as appropriate. Faculty attend trainings and meetings in their free time. Some connections include: UC Davis College of Agriculture and Natural Science Dean, Faculty and Student Advisors, UCCE Rangeland Advisor, California Air Resources Board Cap & Trade Program, Department of Water Resources Delta Restoration Program, Department of Toxic Substances Control, Army Corps of Engineers, USGS Delta Hydrodynamics Team, UC Davis Bodega Marine Lab, UC Davis Marine Pollutions Studies Lab at Granite Canyon, UC Davis Tahoe Environmental Research Center, Dry Creek Conservancy, Friends of Auburn Ravine, Roseville Urban Forestry Foundation, Sierra Streams Institute, Placer Land Trust, Bear-Yuba Land Trust, and the Placer County Planning Department.

ESS is currently evaluating if it is appropriate to offer an AS and an AA. Initial data indicate that if an AA is available, more students will be able to obtain a degree prior to transfer to a 4-year. The AA will also align with more transfer institutions that offer environmental studies rather than environmental science degrees. We are also evaluating if it is appropriate to change the name of the program from Environmental Studies to Environmental Science to more directly align with the rigor of the degree.

Finally, there is not Environmental Science min-qual at the state level. We are evaluating other programs in the state and reviewing CCC criteria to determine if it is appropriate to propose a new state-recognized min-qual.

2b) Student Learning Outcomes Assessment: Analyze your program's assessment of course outcomes, analysis of results, and improvements/changes made to the program as a result of this assessment. Please provide specific data and analysis in the space provided.

In the space below, please describe or attach the cycle you have developed for outcomes assessment.

ESS has defined and developed outcomes for all courses, including the three new ESS courses as well as all cross-listed courses. ESS has developed a cycle for its assessment and evaluation where at least one SLO is evaluated and assessed in every course at least every three years, often more frequently due to the small number of courses offered in the department. Our current cycle has us assessing 30-50% of all courses each year, more than meeting the minimum requirements. The outcomes and schedule are available in the attached SLO spreadsheet.

SLO data are reviewed at departmental meetings during Flex Week each semester. The department has engaged in extensive and thorough evaluation of the assessments and has taken action as warranted. For example, ESS 06F was created as a new course in order to improve the outcomes of ESS 06 so that students who learn better by experiencing the course content first-hand have to opportunity to get into the field with the instructor and directly observe and apply ESS 06 course content.

Please see the attached Department Analysis Assessment (DAA). Individual SLAS forms are available upon request.

Attached: ESS SLO Spreadsheet and DAA Form

2c) Professional development: Please describe how your department's individual and group activities and professional development efforts serve to improve teaching, learning and scholarship.

- Equity and Inclusion Retreat
- Equity Book and Pedagogy Discussion
- Equity Summit
- Sierra College Instructional Skills Workshop
- Pedagogical practices are discussed at department meetings each semester, and faculty are encouraged to share successes and areas in need of improvement in an open and collaborative format.
- Sustainability Across the Curriculum Flex workshops offered to encourage collaboration with the larger campus community
- Academic Senate representation
- Interest Area Instructional Liaison for Earth and Environment
- Natural History Museum Committee participation
- Involvement in Earth Days, People and Culture Days, Love Your Body Week, Social Justice seminars
- Reading of professional and scientific journals to stay up to date in a rapidly changing field
- Remaining up-to-date on legislation that affects environmental systems and energy resources
- Maintaining a wide professional network to remain relevant and current (see 2a)

- This Way to Sustainability Conference at CSU Chico
- Collaborating with other departments including Sociology, Biology, Earth Science, Agriculture, and others as well as with faculty and deans at TT and NCC
- Updating lecture materials *weekly* to remain current with cutting-edge environmental data and conditions

Please describe your staff development needs based on this analysis.

As new part-time faculty are brought in, they will need trainings and orientations on pedagogy and Sierra College culture/resources. There is currently little time or budget currently for faculty to attend professional conferences, but we will look towards this in the future.

2d) Optional Additional Information: Please describe and explain any additional information that supports your evaluation of your program's success.

The ESS Program was nominated by the Academic Senate and was awarded a CCC Board of Governors Exemplary Program Award in January 2019.

On an almost weekly basis, ESS instructors receive feedback from diverse students in their classes. Overall, it seems that a majority of students truly enjoying their ESS courses. Common feedback:

- My eyes have opened to things I had no idea existed in the world.
- I am so much more aware of my impact on the environment, and I am working on making positive improvements.
- This is my favorite class.
- I don't want this class to end.
- After taking this class, I plan to change my major so I can work in a career to improve this world.
- I wish you offered more classes in ESS.
- This class should be mandatory for all students at all colleges.
- (We also get a lot of: "This is so depressing")

3) Effectiveness: This section assesses the effectiveness of the program in light of traditional measurements.

3a) Retention and Success: Assess and evaluate the three-year trends in your program's data contained in the DSR and analyze any relevant information found in the data dashboard related to retention and success. Please include the results of any relevant outcomes assessments, as appropriate. Address separately the data for on ground and online courses, as well as the data for the campus or centers at which you operate. Please describe any challenges experienced by your program; if you determine that you need to improve the program's performance, please describe how you plan to achieve this goal.

As relevant, please address your program's role in the development of MAPs, Interest Areas, and Guided pathways and the impact of these developments on program planning and assessment.

The information in Section 3 is based on data in the ESS DSR (11/27/18), [the Sierra College Factbook 2018](#), and the Student Equity Data Dashboard (accessed 2/2019), unless otherwise noted in text.

Retention (F15-S18)

- ESS overall – 92% (up from 86% F12-S15)
- Distance Learning – 86% (up from 68% F12-S15)
- District overall – 86% (same as F12-S15)

ESS overall retention has improved 6% since the last 3-year Program Review cycle and is 6% higher than District average retention. ESS DL retention has increased 18% since the last 3-year Program Review cycle. It is on par with District overall retention, and although we do not know what District online retention is, we imagine that ESS DL retention is higher than District DL retention.

A large part of the overall increase in retention comes from the 18% improvement in DL. Part of this improvement is likely due to the discontinuation of the TV program, which had low retention in recent years. Furthermore, online course teaching methods were reviewed, and best practices were applied to improve retention. This includes, but is not limited to, utilizing more personal communication rather than group communications, sending more frequent reminders, encouraging community-building among groups to give a sense of belonging, modifying the way that weekly discussions are completed, and utilizing Starfish more regularly. These methods were also applied in on-ground courses.

Success (F15-S18)

- ESS overall – 81% (up from 70% F12-S15)
- District overall – 73% (up from 72% F12-S15)
- ESS Distance Learning – 73% (up from 48% F12-S15)

ESS overall success has improved 11% since the last 3-year Program Review cycle and is 8% higher than District success. ESS DL success has increased 25% since the last 3-year Program Review cycle and is on par with District overall success, and although I do not know what District online success is, I imagine that ESS DL success is higher than District DL success.

The increase in success is due, in part, to the same practices listed in the “retention” discussion above. Additionally, syllabi (*syllabuses* according to Dean Randy Lehr) and course presentations have been modified to include more inclusive and supportive language. Furthermore, the ESS department office has moved from an internal room behind two locked doors in the V-building to a very prominent location in Sewell Hall. This has greatly increased the utilization of office hours by students, leading to an increase in success.

- 3b) Enrollment Trends: Assess and evaluate the three-year enrollment trends in your program’s DSR data. In addition, analyze any relevant information found in the data dashboard related to these trends. Include an analysis of fill rates, wait lists, course cancellations, program completion, and classroom use. Address separately the data for on ground and online courses, as well as the data for the campus or centers at which you operate. Please describe any challenges experienced by the program; if you determine that you need to improve the program’s performance in any way, please describe how you plan to achieve this goal.

As relevant, please address your program’s role in the development of MAPs, Interest Areas, and Guided pathways and the impact of these developments on program planning and assessment.

The three-year average enrollment (F15-S18) for ESS is 192 students per semester. Enrollment has fluctuated up and down during that time, with a range from 144 students in Fall 2016 (when the one full-time faculty member was on maternity leave) to 239 students in Spring 2017. During two of the six semesters, the only FT faculty member was only teaching a 60% load, and another semester she was out

on maternity leave. During these semesters, some classes were canceled due to the inability to fill them with qualified part-time faculty.

- Rocklin: enrollment has averaged 124 students per semester, with a range of 89-161. This reflects number of sections that the one FT faculty member teaches (60% load, full load, or overload).
- Tahoe-Truckee: enrollment remains relatively flat, with an average of 12 students per semester. TT enrollment often fluctuates widely from year to year but remained stable during this PR cycle.
- NCC: Enrollment has decreased during this assessment cycle from a high of 45 to a low of 13-students per semester, with an average of 27 over the cycle. NCC is currently not offering as many/any courses in ESS, thus the decrease.
- Distance Learning: DL enrollment averages about 42 students per semester, reflecting the fluctuation between one or two online courses offered per semester.

3c) Equity: Analyze and evaluate your program’s performance in promoting and/or achieving equity for at risk students and equity in general. Based on this analysis, describe any plans you have to sustain or improve the program’s contribution to student equity as a central component of student success.

Retention based on ethnicity: All groups had a retention of 92% +/- 5% except for two groups: Pacific Islanders had 100% retention, and Unknown/Declined had 82% retention. All groups had higher retention in ESS than their respective groups did District-wide, with the exception of Unknown/Declined. (See Table 1)

Success based on ethnicity: Success had far more variability between groups. Of the nine groups, four had success rates within +/- 5% of the average of 81%. Three groups had significantly lower success (African American 68% success, Hispanic/Latinx 70% success, and Unknown/Declined 55% success). Compared to District averages, African American success in ESS is 11% higher, Latinx success in ESS is 1% higher than, and Unknown is 16% lower. Two groups had significantly higher success (American Indian/Alaskan Native 90% success and Pacific Islanders 100% success). (See Table 1)

Table 1: Retention & Success in ESS, based on self-identified ethnicity, F15-S18

Ethnicity	Average Retention	Average Success	Number of Students
African American	82%	68%	25
(Afr Amer S2018 only)	92%	83%	12
American Indian/Alaskan Native	97%	90%	40
Asian	93%	78%	41
Filipino	89%	78%	9
Hispanic/Latinx	92%	70%	149
Pacific Islander	100%	100%	5
Other/Multi-Ethnic	88%	77%	17
Unknown/Declined	92%	55%	11
White	92%	81%	850
ESS Program Average	92%	81%	1,159
District Average	86%	73%	-

Enrollment based on ethnicity: The ESS program is, on average, 11% more white than the District as a whole (see Table 2). The discipline of environmental sciences as a whole in this country is facing what Pearson and Schuldt (2014) call a “diversity crisis”. The Sierra College ESS diversity is on par with national averages, where 74% of degrees awarded are to white students (<https://datausa.io/profile/cip/030104/#demographics>).

Table 2. ESS and SCCD Enrollment, based on self-identified ethnicity, F15-S18

Ethnicity	ESS %	District %
African American	2	6
American Indian/Alaskan Native	3.5	4
Asian	3.5	5
Filipino	0.8	2
Hispanic/Latinx	13	16
Pacific Islander	0.4	0
Other/Multi-Ethnic	1.5	3
Unknown/Declined	1	1
White	74	63

Increasing diversity in ESS is imperative. Historically underrepresented groups are disproportionately exposed to and negatively affected by environmental pollution, and while there is a desire to improve conditions by people of color, there is a barrier to them entering the field. As outlined in the ESS Spring 2019 DAA, the ESS program plans to reach out to RISE, counseling, New Legacy, Umoja, clubs, athletics, and other groups to raise awareness of and encourage enrollment in ESS courses. We are currently participating in Social Justice courses, campus events, etc. in the hope of raising awareness of and increasing diversity in the program. As Interest Areas are developing, the Earth and Environment IA is very aware of our below-average diversity, and we are discussing, as a group, ways to increase enrollment diversity. We are working to close this gap but have a long way to go.

Retention & success based on ability: Students with disabilities performed better than average (93% retention, 86% success, n=72).

Retention & success based on income: Low-income students had an average retention and a success rate 2% below average F15-S17 (n=324). (No data were provided F17-S18)

Former foster youth had 100% success and retention, though n=5, and so not robust data.

Retention & success for veterans: Veterans had a retention rate 1% above average and a success rate 2% below average (n=42).

Retention & success for gender: Males and females and “Other/Non-disclosed gender” had very similar retention (92% retention for males, 91% for females and other/non-disc). The most successful group was the other/non-disc (86%), followed by female (82%) and male students (78%).

In the ESS department, we work to provide appropriate accommodations to students who need them; not just the ones with provided DSPS forms, but also the ones who approach the instructors and identify as needing them. Students are encouraged to share special needs, and instructors work to be approachable so students can self-identify. Time is also taken in class to inform all students of the numerous resources available to them (eg: food pantry, counseling, lactation room, student engagement centers, tutoring, health center, etc), so even if they are not comfortable identifying a special need to the instructor, they can

still access the needed resources and lower or remove barriers. Information is also provided in course syllabi (syllabuses) and course Canvas pages.

Attached: ESS DSR (11/27/18)

3d) Optional information: Please describe and evaluate any additional relevant information supporting the evaluation of your program's success.

We have worked with counseling to develop a degree map, and will regularly assess it, modifying as needed. We are also very active in the Interest Areas process and hope to increase awareness of and interest in the program as the IA plan unfolds.

ESS courses have an 85% fill rate district-wide. This number is low in part because a relatively high percentage of ESS courses are offered at NCC and TT, both of which tend to have lower fill rates. This causes the whole department to have lower average fill rates overall. Furthermore, the ESS 06/06F classes are not a part of other degree programs, and are not CSU/UC GE courses, so tend to have a lower fill rate. In general, our GE and majors core courses on the Rocklin Campus and online have a high fill rate and are often waitlisted.

Furthermore, because ESS does not have a designated classroom space, we are often required to teach classes in rooms that have a lower capacity than curriculum caps on the Rocklin campus. This decreases the number of students that we can reach each semester.

ESS is a small department and does not offer a large number of classes, but the offerings are popular and are important for students in achieving transfer and GE goals and for the district in achieving its vision and core values.

3e) Analysis and Planning: Referring to the analysis in 3a-d, to your ongoing planning and assessment documents, and to any relevant information from section 2 above, please describe your program's plans to maintain or increase its effectiveness and analyze and evaluate your efforts to achieve these goals. As relevant, please address your program's role in the development of MAPs, Interest Areas, and Guided pathways and the impact of these developments on program planning and assessment.

ESS has an ongoing desire to provide high-quality education, improve equity and diversity, and participate in the larger community. The Department goals, strategies and actions reflect this. As the program has changed substantially since its inception in 2009, the goals and strategies have had to shift. Below you will find a summary of some of the key goals, strategies and actions taken during this PR cycle, and the plans/requests for increasing effectiveness in the future. The ePAR Goals and Strategies Report is attached (abandoned goals and strategies have been omitted).

- Goal 1: Develop/Analyze/Align Curricula
 - Strategy: Assessment. Ongoing SLO development and assessment. See SLO and Program materials for documentation and schedules. All courses have been evaluated and the schedule to evaluate at least every three years has been established (documents attached).
 - Strategy: Program Addition or Change:
 - Offer ESS majors a lab class. Action: New ESS 01L lab class offered for first time S19. Cross-listing of Bio 14 (Natural History, Ecology & Conservation) with ESS.
 - New ESS 08 California Water (lecture + lab) class to be offered F19.
 - New ESS 06F course offered first time F18.
 - Added CHEM 1A (or 3A+3B) to required classes and added GEOG 1 as option instead of ESCI 1 if student chooses.
 - Discussions with BIOL about WET degree visibility

- Goal 2: Provide students with hands-on learning experiences in safe, well-equipped classroom facilities and natural environments.
 - Three new lab and field trip courses created
 - Strategy: Continue to request designated (or shared) classroom space and budget augmentation.
- Goal 3: Sustainability Coordination/Outreach. Actions/Results:
 - Received CCC BOG Exemplary Program Award 2019
 - Sustainability Across the Curriculum Flex Workshops
 - Community Ed Classes in Home Solar and Sustainable Nutrition
 - Facilities and Operations Sustainability Action Plan
- Goal 4 Develop an appropriate level of funding for departmental activities.
 - Asking for budget augmentation in next ePAR round (S19)
- Goal 5 Increase equity and inclusion in ESS courses and program.
 - Attending retreats, summits, trainings, etc.
 - Working intentionally in Interest Area planning to increase equity and inclusion

Attached: ePAR Goals Screen-print 2/2019 and ePAR Goals and Strategies Screen-print 2/2019

4) Resources: This category assesses the adequacy of current resources available to the program and describes and justifies the resources required to achieve planning goals by relating program needs to the assessments above.

4a) Please describe the future direction and goals of your program for the next three years in terms of sustaining or improving program effectiveness, relevance, and currency. Include any relevant analysis of equity goals and the development of MAPs, interest areas, and guided pathways. Please incorporate analysis of any relevant outcome or other data in this description, including any data from the dashboard.

As the course offerings increase in ESS, we are continually held back by a lack of classroom space. There are not enough lab classrooms on campus, and the small ESS department has to wait for BIOL, ESCI, CHEM, AGRI, NUTF and other classes to be scheduled the Division Office is able to find classroom space and times to offer courses. This will limit the ability of the program to grow and may affect course fill if ESS courses receive the less attractive days and times. We maintain open communication with Division to are looking forward to the new scheduling software, as it will include maps, etc. We have also reached out to counseling to inform them of the new courses in the hoped that they will appear on ed plans and we can determine if more sections are warranted.

4b) Please describe and justify any projected requests for additional staff, new or augmented technology/equipment, and additional or remodeled facilities necessary to support these goals. Please incorporate any relevant data related to SLOs, student success, and equity.

Equipment/Technology:

As additional lab courses are written and offered, we have been working with other departments to minimize the needs for new equipment thus far. As this changes, new requests will be made using the PAR process.

Facilities:

ESS has requested a designated (or shared) teaching space so that course materials can be stored and accessible to students, thus improving teaching and learning. This would also allow courses to be offered at capacity rather than the lower caps that certain classroom assignments have dictated. The addition of office space in Sewell Hall (F18) has helped tremendously, but lab/classroom space is still needed.

Staff:

With the current small size of the ESS Department, staffing is adequate. However, as will all one-full-time-faculty departments, the program relies on one person for many needs. Collaboration, creativity, camaraderie and program sustainability would improve with the addition of faculty. The workload that lands on the one faculty member (who also served in shared governance and other capacities) actually limits the ability of the program to grow, and the capacity for growth is not adequate. In the future, we will analyze the ed plans when data are available, and determine if growth is appropriate. If it is, we will shift the priorities towards growth. We are utilizing student help for labs, which is adequate for now.

4e) Please check the appropriate boxes in the chart below indicating the general reasons for the resource requests described above (please check all that apply):

Function/Role	Maintenance	Development	Growth	Safety	Outcomes	Other success measures	No Requests
X			X		X		

5) Summary/Closing

5a) Based on the analysis above, briefly summarize your program’s strengths, weaknesses, opportunities, and challenges.

Though we may be small, we are mighty (or we’d like to think so!). The ESS program is popular among students with an interest in this subject matter. Students who major in ESS are pleased by the increase in the number of courses offered in the program since the last program review cycle. Many students who take an ESS class for GE have their worldview, if not their major, shifted. Students are encouraged to consider conditions, opinions, cultures and experiences that are different from their own, and often broaden their perspective and compassion as a result. They are also taught and encouraged to look at data from an unbiased, scientific perspective, and to critically analyze information with which they are presented in their daily lives. We are proud of the work we do, and we look forward to growing and improving over the years.

We think that Sierra College has a unique opportunity during the restructuring discussions to consider making a Global/Environmental Awareness graduation requirement, and offering students a choice of classes, including ESS 01, that must be taken to earn a degree from Sierra College. This requirement will better prepare Sierra graduates to be engaged, responsible, more equitable and critically thinking members of our global community.

5b) How has the author of this report integrated the views and perspectives of stakeholders in the program?

This program is tiny. While ideas were run by faculty of other departments and area deans, and feedback from students taking ESS classes was taken into consideration when assessing their satisfaction with courses, resources available, and program direction, the report was ultimately compiled by the sole full-time faculty member. Any errors, omissions or oversights are her responsibility.

Thank you,
Krissy Gilbert