Expedited Program Review
Geography, Environmental Studies, Outdoor Studies, Environmental Science

An Expedited Program Review was requested for the BA Geography, Environmental, and Outdoor Studies, the BLA Outdoor and Adventure Studies, the BS Environmental Science, and the BS Geography and Environmental Resources. We were asked to consider the feasibility of consolidating the four degrees into two degrees: one BA and one BS.

Specifically we were asked to address the following:

1. Significant decreasing numbers across the BLA Outdoor and Adventure Studies and the BS Geography and Environmental Resources.
2. Small degree attainment over the past five years (n=8 per year) across all degrees
3. Thirty-five faculty members across UAS who teach in these programs with a student:faculty ratio of 10.5. Please address how this is viable from a budget perspective.

The faculty on this expedited review from the degree programs listed above have met and discussed the feasibility of streamlining the degrees and addressing the three specific points. We have agreed on a plan to revise the degrees that we feel will improve our offerings to students, create clear paths from entering UAS to graduation, and be marketable in a way that will attract students.

In the following sections we (1) present a plan for establishing an Environmental Studies program, which consists of two BS degrees and one BA degree, (2) address the specific concerns listed above, (3) layout similarities and differences between the BS Environmental Science and BS Environmental Resources (formerly BS Geography and Environmental Resources), and (4) discuss tracking of enrollment in the proposed Environmental Studies program.

These suggestions would require longer discussions with and approval from the larger body of faculty across all three departments (Humanities, Social Sciences, and Natural Sciences) that would be affected by these changes.

1. Environmental Studies Program

Our central idea is to bring the several geography and environmentally related degrees into a single interdisciplinary Environmental Studies program that will directly address UAS's mission of studying "the cultures and environment of Southeast Alaska". The program will serve as an umbrella for the BS Environmental Science, BS Environmental Resources, and BA Environmental Studies (proposed name change to the BA Geography, Environmental, and

Outdoor Studies). All students in the program will complete a core set of courses and some upper division/capstone courses.

The basic program structure and core would look as follows:

<table>
<tr><th colspan="4">Environmental Studies Program</th></tr>
<tr><td rowspan="2">Environmental Science BS</td><td rowspan="2">Environmental Resources BS</td><td colspan="3">Environmental Studies BA</td></tr>
<tr><td>Cultural Geography Emphasis</td><td>Environmental Studies Emphasis</td><td>Outdoor Studies Emphasis</td></tr>
<tr><td colspan="4">Shared Core:
ENST S100 – A Sense of Place
ENST S101 – Culture and Environment
ENVS S102 – Earth and Environment</td></tr>
<tr><td colspan="4">Potential Shared Upper Division Courses (TBD):
GEOG S313 – Sustainable Resource Management
GEOG S350 – Interdisciplinary Perspectives on Climate Change
Choose one of ENST S490 – Environmental Studies Seminar or ODS S445 - Outdoor Studies Emphasis Capstone</td></tr>
</table>

Treating these three degrees as part of a single Environmental Studies program will achieve several important objectives: it will (i) build program cohesion by bringing together students and faculty across these degrees, who will now see themselves as part of a broader Environmental Studies program, (ii) reduce administrative overhead since the degrees will have a single program coordinator and be evaluated as a single program, which would also eliminate most of the issues associated with evaluating our interdisciplinary degrees, and (iii) be marketable as a group.

We imagine marketing taglines or page headings such as “Come to UAS to Study the Environment.” The UAS website would have a page dedicated to the Environmental Studies program, with descriptions of these three related degrees. We feel that this will allow us to do a better job of attracting students than we have done in the past. Bringing the degrees together under a single program will also allow our students to relate to each other and to identify as Environmental Studies students. We hope that continuing to foster the identity of the program will help with retention and degree completion.

The offerings and faculty will support all three degrees. The programs will be designed so that students will be able to move between the BS and BA degrees. The three emphases within the BA Environmental Studies will allow students to specialize but will also be flexible enough to allow them to move between them and between BA Environmental Studies and the BLA where appropriate (the emphases will be organized in a way that is similar to the UAS English Degree which has emphases in Creative Writing, Literature, and Literature and the Environment). Additionally, note that the B.S. Environmental Resources is undergoing some curriculum changes to both better align it with the BS Environmental Science and to clarify the differences between the two BS degrees. For reasons that we discuss in Section 3, we find it difficult to consolidate these degrees into a single BS.

We will create an Environmental Studies course designator: ENST. This new designator will replace the current GEOG, HUM, and ODS designators on some select courses. We want students and faculty to see the BS and BA degrees, and the tracks within them, as part of the same program. An ENST course designator will help with this. To clarify differences and similarities in the degrees and to simplify administrative tasks, we will also stop using the GEOG designator on courses that are currently cross-listed with ENVS.

The program core and shared upper division courses will be important in creating program identity. We plan to replace our current GEOG S101 – Introduction to Geography with ENST S101 – Culture and Environment. We will continue to offer our current ENVS S102 – Earth and Environment. We also propose that the Environmental Studies program take over HUM S120 – A Sense of Place and repackage it as ENST S100 – A Sense of Place. We can support and offer this course as an interdisciplinary introductory seminar course that all incoming Environmental Studies students take. Ideally this would be co-taught by faculty from different departments that serve Environmental Studies, as has been done with HUM S120. The shared upper division courses require additional discussion, but some potential candidates are listed in the table above.

2. Specific Concerns

1. **Decreasing numbers in the BLA and in the BS Geography and Environmental Resources.**

The declining numbers in the Outdoor and Adventure Studies BLA and in the BS in Geography and Environmental Resources are concerning. According to the data received for the 2017-18 ODS Assessment Report, there were 5 students enrolled in the BLA option. While there were a few more students in the program in prior years, the BLA option has been less attractive to our students then the ODS Certificate or the BA Geography, Environmental, and Outdoor Studies.

Even so, after consulting with the BLA Coordinator, at this juncture we do not recommend removing the Outdoor and Adventure Studies emphasis in the BLA. The BLA degree as a whole

has seen a decrease in enrollment; removing ODS students from the degree will reduce its numbers further. Revisions to the BLA in the past year have streamlined the degree for students and may help with enrollments. The BLA in Outdoor and Adventure Studies continues to be a very good option for humanities-oriented students who wish to pursue outdoor studies. Given that it does not require us to offer additional courses, we recommend leaving it in place as an option for BLA students, but will continue to work to make it accessible to more BLA students. .

The BS in Geography and Environmental Resources has had small but relatively steady numbers. Our hope is that the visibility gained by associating the degree with the Environmental Studies program will lead to increased enrollments.

2. **Degree Attainment**

We also agree that degree attainment could be improved. It is our hope that revising our programs and building flexibility into them will help to provide students paths to graduation. This may, in some cases, require students to move between emphases in the degrees.

As well, we hope that creating a unified Environmental Studies program will improve our ability to retain students.

It is worth noting that the graduation rate in the ODS certificate program is very high. In fact, according to the data packet, the ODS program had more graduates than majors in each of the past two years, resulting in a graduation rate of over 100%.

3. **Student/Faculty Ratio**

While 35 faculty contribute to the geography and environmental studies programs, many of them contribute only a small part of their workload and many of these faculty are not in the degree programs (for example, Biology, Chemistry, Math, and Statistics courses are counted in these numbers). In the most recent Program Review for Outdoor Studies, the instructional FTE, including full and part-time faculty, ranged from 1.5-1.7 over a 5-year period. Similarly, the instructional FTE for Environmental Science has ranged from 1.7-2.4 over the past five years. This is also the case for the geography degrees.

More importantly, we agree that a 10.5 student:faculty ratio could be improved. According to the data packets, all of the programs seem to be in a similar position in regard to this ratio. It is likely that the only way to improve it is to better coordinate our course offerings so that they match student enrollment targets. Having a more unified program will help with this. Of course, simply having more students in our programs will also help in this regard. We suggest that, if we can implement our new program organization, we can set an early target of a student:faculty ratio of 12. If we achieve that, we can look at possible new options.

A number of issues have caused difficulties when evaluating our interdisciplinary degrees. Some of these issues (such as eliminating the cross-listing of ENVS/GEOG courses) will be resolved by evaluating the degrees as part of a single program. In Section 4 we propose a method for evaluating the Environmental Studies program.

3. Comparison of BS Environmental Science and BS Environmental Resources

During summer 2019, in response to the Environmental Science 5-year review, we attempted to consolidate the B.S. Environmental Science and B.S. Geography and Environmental Resources into a single B.S. degree. We found that this was challenging due to some key differences in their degree requirements. Essentially, the Environmental Science degree has a more stringent set of core science requirements, whereas the Geography and Environmental Resources degree requires more social science and humanities courses related to human interactions with the environment. Nonetheless, in order to better align these degrees and to clarify their similarities and differences we submitted to the curriculum committee several proposed changes for the Geography and Environmental Resources degree, and we anticipate additional changes next year resulting from our attempts to build a more cohesive and inclusive Environmental Studies program. The key changes that we have proposed thus far are to (i) change the degree name to simply Environmental Resources and (ii) switch to using the ENVS designator for all cross-listed courses that are used in the Environmental Resources degree.

In the following table we outline the similarities and differences between the degrees, assuming that the changes that we recently proposed are approved. Below we discuss the challenges with combining these degrees into one.

B.S. Environmental Resources		**B.S. Environmental Science**	
Minimum Credit Hours	**120**	**Minimum Credit Hours**	**120**
General Education Requirements	36	General Education Requirements	36
Alaska Native Knowledge Graduation Req.	3	Alaska Native Knowledge Graduation Req.	3
Major Requirements	56	Major Requirements	64
Electives	28	Electives	20
General Education Requirements Complete all General Education Requirements which must include the following: MATH S251 Calculus I One of the following Science sequences: BIOL S105 Fundamentals of Biology I & BIOL S106 Fundamentals of Biology II CHEM S105 General Chemistry I	36	**General Education Requirements** Complete all General Education Requirements which must include the following: BIOL S105 Fundamentals of Biology I ENVS S102 Earth and Environment MATH S251 Calculus I	36

/ S105L General Chemistry I Laboratory & CHEM S106 General Chemistry II / S106L PHYS S123 College Physics I & PHYS S124 College Physics II PHYS S211 General Physics I & PHYS S212 General Physics II	
Major Requirements ENVS S102 Earth and Environment 4 ENVS S338 Introduction to GIS 3 ENVS S492 Environmental Science Seminar 1 GEOG S101 Introduction to Geography 3 GEOG S312 Humans and the Environment 3 GEOG S313 Sustainable Resource Management 3 GEOG S490 Geography Seminar 2	**Major Requirements** BIOL S271 Ecology 4 ENVS S422 Earth's Climate System 3 CHEM S105 General Chemistry I 3 CHEM S105L General Chemistry I Laboratory 1 CHEM S106 General Chemistry II 3 CHEM S106L General Chemistry II Laboratory 1 GEOL S104 Physical Geology 4 GEOL S302 Hydrology 4 STAT S200 Elementary Statistics 3 Select one of the following Physics sequences: 8 PHYS S123 College Physics I & PHYS S124 College Physics II PHYS S211 General Physics I & PHYS S212 General Physics II
	Capstone Courses ENVS S375 Current Topics in Earth and Ecosystem Research 2 ENVS S492 Environmental Science Seminar 1 Select at least one of the following: 1 ENVS S491 Environmental Science Internship ENVS S498 Research in Environmental Science
Environmental Systems and Earth Processes Select twenty-one credits of the following: 21 BIOL S271 Ecology BIOL S373 Conservation Biology BIOL S480 Aquatic Pollution CHEM S350 Environmental Chemistry ENVS S302 Glaciology	***Concentration Areas*** Select twelve credits from primary concentration and six credits from either concentration: 18 *Forests and Ecosystems* CHEM S350 Environmental Chemistry ENVS S414 Biogeochemistry ENVS S416 Biogeography & Landscape Ecology

ENVS S407 Snow Hydrology ENVS S414 Biogeochemistry ENVS S416 Biogeography & Landscape Ecology ENVS S422 Earth's Climate System GEOG S210 Temperate Rainforest Ecosystems GEOL S301 Geomorphology GEOL S302 Hydrology GEOL S320 Mineral, Energy, & Renewable Resources	ENVS S430 Forest Ecosystems ENVS S431 Forest Field Ecology Laboratory ENVS S475 Field Studies in Environmental Science GEOG S210 Temperate Rainforest Ecosystems GEOG S313 Sustainable Resource Management *Earth Systems and Climate Change* ENVS S213 Natural Hazards ENVS S302 Glaciology ENVS S407 Snow Hydrology ENVS S414 Biogeochemistry ENVS S475 Field Studies in Environmental Science ENVS S496 Juneau Icefield Research Program GEOG S350 Interdisciplinary Perspectives on Climate Change GEOL S301 Geomorphology GEOL S320 Mineral, Energy, & Renewable Resources
Human Dimensions of Environmental Resources Select two of the following: 6 ANS S320 AK Native Ecological Knowledge ANTH S342 Arctic Anthropology ANTH S408 Ethnobiology ECON S435 Natural Resource/ Environmental Economics ENGL S303 Literature and the Environment ENVS S213 Natural Hazards GEOG S350 Interdisciplinary Perspectives on Climate Change PHIL S371 Perspectives on the Natural World PS S458 Environmental Politics SOC S404 Environmental Sociology	
Quantitative and Spatial Analysis Select ten credits of the following: 10 ENVS S111 Introduction to Differential GPS ENVS S309 Mobile GIS Technology & Applications ENVS S406 Remote Sensing ENVS S409 GIS Jam: Projects in GIS and Remote Sensing	***Quantitative and Spatial Analysis*** Select eight credits of the following: 8 BIOL S355 Experimental Design and Data Analysis ENVS S111 Introduction to Differential GPS ENVS S309 Mobile GIS Technology & Applications ENVS S338 Introduction to GIS

ENVS S410 Advanced Geographic Information Systems MATH S460 Mathematical Modeling STAT S200 Elementary Statistics STAT S401 Regression and Analysis of Variance	ENVS S406 Remote Sensing ENVS S410 Advanced Geographic Information Systems MATH S252 Calculus II STAT S400 Statistical Computing with R STAT S401 Regression and Analysis of Variance
Electives Select 28 credits of electives in consultation with an advisor, including a minimum of 12 credits of upper division courses.	**Electives** Select 20 credits of electives as needed to meet 42 upper division credits required for the degree.
Total Credits 120	**Total Credits 120**

The B.S. Environmental Science (ENVS) and B.S. Environmental Resources (ENVR) differ in several ways. Some of these differences are difficult to reconcile in a single degree, whereas others could be addressed pretty easily.

1. The ENVS degree is more prescriptive than the ENVR degree, particularly for the lower division requirements. In particular, the ENVS degree requires a broader and more quantitative background in the natural sciences.
2. The ENVS degree contains required *Capstone Courses*. Program faculty are considering adding a similar series of courses to the ENVR degree (in addition to the changes proposed in Section 1).
3. The ENVS degree has *Concentration Areas* that contain many of the same courses that are found in the *Environmental Systems and Earth Processes* portion of the ENVR degree. These two sections are essentially equivalent.
4. Both degrees have *Quantitative and Spatial Analysis* sections that are very similar. The slight differences are related to differences in major requirements and the desire to make the ENVS degree more quantitative.
5. The ENVR degree has a section *Human Dimensions of Environmental Resources* that is not present in the ENVS degree. The ENVR degree currently requires 6 credits from this section, although program faculty are in favor of increasing the number to 9 credits. Adding a similar requirement to the ENVS degree would make it overly prescriptive.

The ENVS and ENVR degrees share a lot of similarities. However, it is difficult to combine the degrees without reducing the quantitative nature of the ENVS degree (which has been the more popular of the two degrees) or making it overly prescriptive. Additionally, increasing the major requirements of the ENVR degree will result in the loss of students who are less quantitatively inclined and that are more focused on careers in resource management. Similarly, eliminating the ENVR degree will not reduce the number of courses that we offer, as all of the courses in the degree are required either by the ENVS degree or other degrees at UAS. We do feel, however, that better synergy between the degrees could be created by making some small modifications to both degrees beyond what we have already proposed. We recommend adding *Capstone Courses* to the ENVR degree and eliminating the concentration areas in the ENVS degree and renaming that section of the degree *Environmental Systems and Earth Processes*.

These two degrees should be evaluated together, either under the umbrella of the proposed Environmental Studies program or independently.

4. Program Tracking

When evaluating the Environmental Studies program, we propose breaking the evaluation into three parts: program courses, “independent” courses, and service courses. The exact details of what courses to include will require additional discussions between program faculty and IE, and will likely evolve as the programs continue to be refined.

Program courses are courses that are required by the degrees within the program and that primarily serve these degrees. When counting “program courses” for the Environmental Studies program, we propose

- only counting courses that are required for any of the three degrees *and* that have the ENVS, ENST, GEOG, GEOL, and ODS designators,
- excluding Independent Study, Directed Research, and Internship courses, as these courses have an enrollment of 1, may be for multiple credits, and generally contribute very little to faculty teaching workloads, and
- excluding ENVS S496 – Juneau Icefield Research Program, which is also generally taken by just 1 student from UAS and does not affect faculty teaching workloads.

“Independent” courses are those that are taken by one student and contribute very little to faculty workloads, such as independent studies, directed research, and internships. These courses provide unique opportunities to our students and should be valued and tracked accordingly. We propose tracking the total number and total credit hours of these courses.

Service courses are courses that are delivered by program faculty that either have a large percentage of students that are not in the Environmental Studies program (such as the introductory physics track) or that are not requirements for any of the program degrees (such as GEOL S105 – Geological History of Life). The courses should be evaluated by student credit hours and student:faculty ratio in order to highlight the impact of Environmental Studies faculty on other degree programs across UAS.

The most challenging of the three degrees to evaluate is probably the BA Environmental Studies since it includes a number of courses that primarily serve other degrees (such as the BA Social Sciences). We recommend excluding those courses as part of the program evaluation.