

Date: 4/17/2025

To: Alison Staudinger, Interim Dean of Arts and Sciences, University of Alaska Southeast

From: Program on the Environment Coordinators, Drs. Kevin Maier and Jason Amundson

Re: Program on the Environment Annual Assessment for AY 2023-2024

1. Program Overview

The Program on the Environment includes three degrees:

- Bachelor of Science in Environmental Science
- Bachelor of Science in Environmental Resources
- Bachelor of Arts in Environmental Studies, which includes an emphasis option in Outdoor Studies

The program provides students with interdisciplinary training that is necessary for addressing a variety of complex environmental issues facing society. The program consists of three degrees with varying amounts of overlap. All three degrees have a shared core of fundamental, cross-cutting courses that serve students pursuing a wide-range of environmental interests.

The B.S. Environmental Science provides students with rigorous training in Earth science, chemistry, climate change, and ecology. The B.S. Environmental Resources shares many courses with the B.S. Environmental Science, but places greater emphasis on human-environment interactions and understanding the Earth from geographic and resource management perspectives. The B.A. Environmental Studies focuses heavily on human-environment interactions, including policy, philosophy, and management. Students in the B.A. Environmental Studies may choose to pursue an emphasis in Outdoor Studies. All three degrees use the natural laboratory available to students in Southeast Alaska through hands-on field exercises and guided research projects with program faculty. All program students are required to complete a capstone, through internships, an individual research project, or a capstone course. Program graduates are well-prepared for (i) employment in resource management, policy, conservation, tourism, and environmental consulting and (ii) to enter graduate programs in environmental sciences or studies, environmental education, environmental policy, political science, sociology, anthropology, geography, and related fields.

The relationships between the three degrees are illustrated in the following table.

B.S. Environmental Science	B.S. Environmental Resources	B.A. Environmental Studies
Program on the Environment Core 9 credits		
Major Requirements 36 credits	Major Requirements 23 credits	Breadth 9 credits
	Interdisciplinary and Field Courses 6 credits	
	Human Environment 6 credits	
Environmental Processes 17 credits (Environmental Science) 14 credits (Environmental Resources)		Concentration requirements Environmental studies emphasis (15 credits) or Outdoor studies (24 credits)
Quantitative & Spatial Analysis 8 credits		
		Electives 30-40 credits

2. Program Student Learning Outcomes

The Program on the Environment lists the following Program Learning Outcomes (PLOs):

By the time that they have finished their degree, all students in the Program in the Environment will be able to:

- 1. Describe the fundamental components and interactions of Earth systems, environments, and social systems, including an understanding of their relevance to Southeast Alaska.*
- 2. Use research techniques to investigate Earth systems and environmental problems.*
- 3. Use diverse written and oral communication skills to effectively communicate environmental issues.*

These program learning outcomes were created during AY 22/23, submitted to the curriculum committee in AY 23/24, and published in the catalog in AY 24/25.

Last year marked the first program assessment for the Program on the Environment; in that assessment we selected the first PLO to be the focus of the report. This year we evaluated the second PLO.

3. Methods: How the data on the PLOs were collected

In order to collect data on the effectiveness of the second PLO, we relied on three metrics: the evaluation of a subset of program course syllabi, exit interviews, and an open faculty discussion about degree pathways. For syllabus evaluations, we held meetings with program faculty from Natural Sciences, Humanities, and Social Sciences. We selected two courses from each department to evaluate. The faculty group examined syllabi from each of the courses and assessed the degree to which they contribute to the PLO and how well course assignments address both the course-specific student learning outcomes (SLOs) and the PLO. An explicit objective in this process was to foster greater alignment across diverse coursework in our program. There are multiple pathways through the three degrees within the PotE, and this part of the assessment helped ensure that students met the second PLO through their coursework, regardless of their particular pathway.

For the exit interviews of our graduates, program coordinators sent emails to each of our program graduates from 2023-2024 and asked them the questions listed in the Appendix of this report and then summarized and compiled the responses. Only one of the eight graduates responded to our request. Receiving feedback from graduating students has been a challenge for us. Starting in spring 2025, we will start adding additional questions to our course evaluations to help us better understand how well we are meeting our program learning outcomes.

In response to last year's assessment report, we are no longer assessing transcripts. This proved to be of limited value. Therefore we will modify our assessment plan accordingly. Instead of assessing transcripts, we had an open discussion about course substitutions and typical pathways through the various degree programs. This proved interesting, as we discussed how cohorts form and whether they cohere around BA or BS degrees. It is our impression that cohorts are not degree specific, but rather that there is an emergent program-on-the-environment identity forming.

4. Results: Data collected on the PLOs

4a. Results of the syllabus and assignment evaluations from the 2024-25 academic year

Below we summarize how each of the six courses that we evaluated align with the second program PLO, which reads that students completing this program will be able to *"use research techniques to investigate Earth systems and environmental problems."* We also looked at notes on PLO #2 from last year's assessment, as we had those data.

1. ENVI 120: Cultures and Environments (F2024; Kevin Maier)

This course contributes to PLO #2 through multiple short assignments in which students reflect on and respond to readings relating to environmental issues and ask questions regarding those issues. Students completing the course must demonstrate introductory proficiency in critical thinking, which lays the groundwork for the skills needed to complete further research. The central course text, *Keywords for Environmental Studies*, and the writing and speaking assignments prepare students to consider different research approaches across different disciplines in the degree program.

2. GEOL 104 (Physical Geology: F2024, Sonia Nagorski)

This is a lab science GER. As a 100-level course, the specific natural science research techniques in Earth Science taught in this course focus on foundational laboratory and field-based tools that will allow students to grow their competence as Earth Scientists in their future course sequences. The techniques focused on here are primarily hands-on and practical; 40% of the grade is based on their laboratory notebooks and field work experience,

reflecting the critical nature of research techniques in this course design. We looked at an example lab, and found that lab assignments emphasized the following specific research techniques: (1) identifying the common rock-forming minerals, rock types, and landforms (2) learning critical field techniques; (3) learning to use laboratory tools and instrumentation for collecting geomorphic and geochemical data; (4) transferring and analyzing data using fundamental graphic and statistical programs; and (5) synthesizing the individual skills they have learned in order to collect geologic information directly in the field.

3. **ODS 372 (Mountain Studies; S2024, Forest Wagner and Kevin Maier)**

Students draw on a variety of research techniques in ODS372, including critical analysis of outside texts and experiential activities. For example, students document their experiences in field outings through journaling. Students also draw on a variety of research approaches in their final project and presentation, in which they describe a significant mountain event, drawing on their academic training from across the Program on the Environment curriculum.

4. **ENVS 407 (Snow Hydrology; S2024, Eran Hood)**

This course satisfies PLO #2 in that it teaches students about skills and techniques in snow hydrological data gathering in Southeast Alaska and requires students to apply these techniques, including snow pit data gathering and recording, avalanche probe measurements and the use of the SnowPilot graphing tool. Students are asked to analyze and communicate their data and analysis in relationship to broader phenomena (i.e., past weather events).

5. **ENVI 350 (Interdisciplinary Perspectives on Climate Change F2024; (Kevin Maier, Glenn Wright, and Julie Schram)**

The main emphasis of this course is the fundamental components and interactions of social systems and environments, using narratives as a lens through which to analyze these interactions and perceptions. The course emphasizes communicating across disciplines. Primary skills developed in this class include (1) communication (a critical social and natural science research technique) through both oral presentation on scientific topics and poster presentations which are a practical and common form of sharing scientific knowledge (2) identification of questions of interest and points of uncertainty generated from assessment of reading material (foundational skills for research development in any field) and (3) reading of primary literature (a critical research technique across humanities, social and natural sciences, and the foundation of all research). While the assignments vary as the instructors change, this year the policy memo assignment served to meet PLO #2 effectively, with its emphasis on synthesizing political responses to climate

change.

6. HUM 372 (Salmon, Sport, and Society S2024; Kevin Maier)

This course examines the relationship between culture and fish. Students draw on a variety of research techniques in the course, including critical analysis of outside texts and experiential activities. Students draw on research particularly in two key assignments: the discussion-leading panel and seminar paper. The seminar paper, the syllabus notes, requires “some outside research.”

4b. Additional Program Information

A full compilation of the responses from the 1 alum who replied to our inquiry are provided in Appendix A1. Similar to responses from previous years, this alum appreciated the variety of pathways that our program offers as well as the dedication of faculty in the program. They did wish that we offered more classes related to environmental policy, and specifically pointed to the UAF Climate Scholars program as the sort of thing that we might be able to offer at UAS.

We also recently proposed some changes to the Human-Environment sections of the B.S. Environmental Resources and B.A. Environmental Studies. We removed a course that is no longer offered (GEOG S390: Critical Geography) and one that has not been taught for many years (PS S458: Comparative Environmental Politics). The courses were replaced with ANS S321: Subsistence in Alaska and PSY S304: Environmental Psychology. We anticipate that the hiring of Hekia Bodwitch as Assistant Professor of Marine Policy will also allow us to expand our resource management and policy offerings, especially at the upper division level.

5. Evaluation of the Data Collected

5a. Syllabus Evaluations for Alignment with the Second PLO

Our evaluation of syllabi and assignments showed that each of the six courses that we evaluated had some degree of alignment with the second Program Learning Outcome. As expected, we found that there were greater research demands, with specific research techniques being more present in upper division courses. The assessment brought to light differences in research techniques across departments and how this affects scaffolding of the degrees. Lower level courses in Natural Sciences tend to focus on skill development, with more emphasis on scientific inquiry coming in upper division courses. Social Sciences and Humanities appear to place more emphasis on inquiry in lower division courses because there may be a lower “barrier for entry” (fewer prerequisites). These differences also highlight the value of interdisciplinary course work and degree pathways. For example, by combining social and natural science research techniques,

students learn both to refine the questions they are asking based on nuanced thought development and writing development, and they expand the toolkit with which they can answer those questions.

5b. Exit Interviews

Unfortunately only 1 alum responded to our survey. Their feedback mirrors what we have received in previous years in praising the degree programs, but also suggests that we could strengthen our program by offering more policy-oriented courses. From such limited feedback it is difficult to tell if there is a demand for more policy courses, but the popularity of GEOL S320: Mineral, Energy, and Renewable Resources, ENVI S313: Sustainable Resource Management, and ENVI S350: Interdisciplinary Perspectives on Climate Change suggests that this is not just one student's opinion. As we continue to evaluate our programs we will consider whether there is the demand, and if we have the capacity, to offer more courses of this nature.

6. Conclusions and plans for program improvement

6a. Conclusions

The Program on the Environment at UAS provides a wide variety of courses on the environment, from policy to writing to scientific foundations, and we are strong in our performance of providing students with the second program learning outcome: *Use research techniques to investigate Earth systems and environmental problems.*

All of the courses that we selected provide at least some training that helps students to investigate Earth systems and environmental problems. The specific methodologies that students learn vary across disciplines and course levels, and range from learning skills that are necessary to study Earth systems to critical thinking and inquiry. Based on our discussion with program faculty and advisees, we conclude that students come away with a solid achievement of this program outcome. In addition to learning these skills in the classroom, we also note that the majority of students complete either a directed research project and/or an internship, which provides them the opportunity to apply the techniques that they have learned in the classroom to the real world. Additionally, each of the classes we assessed included at least some time in the field (ranging from a couple of outdoor labs to weekly field excursion to week-long expeditions across the state). Getting students into the field is a core value of our program, so we are heartened that courses are creating these opportunities for students.

6b. Suggestions and plans for future years

Receiving feedback from students via exit surveys continues to be a challenge. This year we requested feedback from students prior to graduation but still had a very poor

response rate. We may need to consider including a formal exit interview as part of the graduation process.

To better understand how courses meet the program learning outcomes, we also decided to start including targeted questions in the student course evaluations. This information will be compiled and shared in program assessments for future years.

The robust discussion around individual classes proved useful for thinking about program unity. It might benefit faculty to have these discussions earlier in the academic year so we can make minor in-year adjustments to our individual classes.

Appendix: Exit Interview Questions and Responses

Below is a compilation of responses from the class of 2024 alumni to a Program on the Environment exit survey we sent out. Of the eight students we sent survey requests to, we received responses from one. Here we compile our questions, with the responses below each.

1. What attracted you to the UAS Program on the Environment?

- I was attracted to the Program on the Environment because of the three different pathways you could choose. I liked that there were options for being more focused on social sciences, physical science, and a mix of both. The classes offered for the program also were of interest to me.

2. How many years did you spend in the program?

- I spent two years in the program.

3. What were the strongest or most effective aspects of the program?

- The dedication of the professors is what made the program effective for me. All of my professors strived to provide interesting topics and do a lot of hands-on learning. The classes were also very relevant to Juneau and Southeast Alaska, and helped me understand the environment here, along with expanding to a more global view on a lot of topics.

4. Can you think of specific ways that we could improve the Program on the Environment for future students?

- I think it would be fun if there were more intensive courses based on climate and social aspects of the changing climate. I recently learned about UAF's Climate Scholars program. They do week-long trips that focus on the interaction of social and scientific aspects of climate change. On one trip they went to DC to talk to Representatives and Senators about what they're doing for climate change. I think UAS should look into the UAF program and maybe even collaborate with them. A class on climate/environmental policy could also be super interesting.

5. Are there any courses that were not offered that you feel would have strengthened the program?

- As said above, climate/environmental policy would be an interesting class I would have taken.

6. Did you feel that you received effective academic advising in the course of completing your degree?

- Yes! I felt like my interests were always a top priority and I got to take a lot of classes I was super interested in, while fulfilling degree requirements.

7. Did you feel courses were available when you wanted to take them?

- For the most part, yes.

8. Did you participate in an undergraduate research project during your degree, and If so, in what capacity?

- No.

9. What are you doing career-wise now, and/or what are your career or graduate school plans?

- I am interested in working in renewable energy (possibly with REAP).

10. Are there ways that the Program on the Environment could have better prepared you for your expected career pathway?

- I don't really have an expected career pathway, so I don't have any comments on this.