



Activity report for PhD studies in Environmental Science

1. Description of the subject

Environmental science focuses on the interaction between nature, the environment and human beings, and is thus central to achieving sustainable development. In particular, environmental science focuses on the study environmental problems, including their causes, effects, and possible measures and solutions. This field is inherently interdisciplinary and primarily founded in the natural sciences and engineering, with clear links to other subjects such as political science, law, economics, and behavioral sciences. At EMG, current research in Environment Science uses both modern and paleoecological approaches to explore the various impacts of anthropogenic change in northern landscapes.

2. Overview of the research environment

The broader PhD program at EMG is comprised of three core subject areas: Ecology, Physical Geography, and Environmental Science. While there are disciplinary distinctions among these areas, there is also considerable overlap, and the PhD students are organized as a single entity beneath the EMG umbrella. Overall, EMG currently has about 75 persons active in research, including 25 PhD students (in 2019), 10 professors, and 19 lecturers.

PhD advisors at EMG are embedded within national and/or international research constellations. These networks bring our PhD students in contact with researchers across academic and non-academic institutions in Sweden and abroad. The details of these interactions vary amongst students and across the different laboratory groups. For example, 7 of our PhD students are currently working as part of a large Wallenberg project on northern lakes that brings them in contact with faculty, post-docs, and other PhD students from across Sweden. Similar groups exist, and in the case of our industrial PhD students (4) involve interactions with researchers and managers outside of the academy.

In addition to relationships formed within these research groups, EMG also supports an active (weekly) seminar series for the entire department. Here, seminars are given by both internal (EMG) and external scholars, and students are provided opportunity to interact with visitors if they so choose. As part of this seminar series, there is also money set aside for PhD students to invite speakers that, as a group, they would like to host. Finally, PhD students also organize a separate Friday seminar series, where each student is required to give short presentations (annually) that update fellow students and faculty on the progress of their research. Finally, we also organize an orientation course for all new PhD students in the department. This course addresses the practical issues associated with earning a PhD degree at EMG and Umu, but also initiates a philosophical discussion of science that extends throughout their first year in the program.

3. Previous years VB / VP or recently conducted external review

There have been no past reviews to reflect upon at this time.

4. National learning objectives

We are currently in the process of integrating the assessment of the national learning objectives within our annual follow up of student individual study plans (ISPs). Our updated system of assessment will be brought online in autumn 2020.



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5. Internationalization

PhD advisors at EMG hail from 4 different countries (Sweden, US, China, Netherlands, and Switzerland) and our PhD students have an even greater diversity of backgrounds (6 countries). By itself, this makeup of personell creates an international environment in the department. In addition, as described above, several research programs are embedded within international networks, and our student benefit from these constellations. For example, at the moment, EMG researchers (including PhD students) work as part of international networks in the fields of paleolimnology, analysis of environmental DNA, and studies on the effects of novel contaminants (e.g., pharmaceuticals) on ecosystems. Finally, our students are given the opportunity to attend international conferences and/or workshops during their PhD studies.

6. Gender equality

EMG currently has eight female PhD advisors and/or co-advisors, representing 38% of the advisors at the department. Females also account for more than 50% of the current PhD student body. We currently promote gender equality in PhD education in the following ways: 1) we strive for gender balance when selecting PhD candidates to interview as well as for the interview committee that participates in recruitment; 2) we require gender balance when selecting opponents and committee members for PhD defenses; and 3) all students take faculty-level PhD courses that increasingly address aspects of gender.

7. Collaboration and working life in education

EMG is working to support student's transition to professional life in several ways. First, as part of the PhD orientation course, we lead a broad discussion aimed at navigating diverse career paths with a PhD in Ecology and Environmental Science. At the scale of individual lab groups, we urge all PIs to initiate and curate a running dialog with students to help prepare them for whatever career path they seek. In this context, we also encourage all students to participate in conferences and workshops and actively help them establish their own networks. In a more direct sense, several of our PhD students work as part of the Industrial School, and are more explicitly exposed to training related to career development. Finally, we are in the process of developing an EMG career day. Here, we will invite alumni from our program that now work in public and private industries, non-profits, and the academy to discuss their careers trajectories. The goal here is for students and advisors alike to learn what different potential employers are looking for and thus how students can make themselves most competitive for whatever endpoint they choose. A secondary goal is to establish a network of alumni that can be more actively involved in helping our students find opportunities upon graduation. The first of these career days was originally planned for Spring 2020, but had to be postponed. We will reschedule for autumn 2020, and then decide how frequently we should host these for them to be most effective.

8. Perspective on sustainable development

At our most recent annual retreat, EMG faculty and PhD students brainstormed ideas to establish a new set of department recommendations for sustainability. This included ideas for making our workplace more environmentally friendly, but also for establishing a new set of guidelines for travel to minimize EMG's carbon footprint. An environmental policy for the department will be developed in 2020.

9. The influence of doctoral students

PhD students are represented in all relevant departmental committees, and are thus given voice to express all concerns and desires related to PhD education, undergraduate



teaching, and department decisions. PhD students are also encouraged to participate in general department meetings as well as in our annual retreats.

10. Några nyckeltal för forskarutbildningsämnet Miljövetenskap

	2018	2019
Aktiva doktorander	5	4
Varav kvinnor	2	1
Varav män	3	3
Under året antagna doktorander	1	0
Varav kvinnor	0	0
Varav män	1	0
Examina	1	1
Varav kvinnor	1	0
Varav män	0	1
Doktorander i forskarskola (ange namn på forskarskolan här, lägg till fler rader om ni har flera skolor)	0	0
Varav kvinnor	0	0
Varav män	0	0
Industridoktorander	1	1
Varav kvinnor	0	0
Varav män	1	1
Huvudhandledare	3	3
Varav kvinnor	1	1
Varav män	2	2
Professorer	12	12
Varav kvinnor	4	5
Varav män	8	7
Lektorer	20	19
Varav kvinnor	4	4



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Varav män	16	15
Biträdande lektorer	1	1
Varav kvinnor	0	0
Varav män	1	1
Docenter*	10	8
Varav kvinnor	2	1
Varav män	8	7

- 11.** * Detta avser utsedda docenter, ej professorer.
12.



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Lektorer		
Varav kvinnor		
Varav män		
Biträdande lektorer		
Varav kvinnor		
Varav män		
Docenter*		
Varav kvinnor		
Varav män		

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