



Global Change Ecology

Graduate Program (M.Sc.) within the Elite Network of Bavaria

www.global-change-ecology.de



Scope

The graduate program Global Change Ecology is devoted to understanding and analyzing the most important and consequential environmental concern of the 21st century: global change. Using an interdisciplinary approach, the program aims to combine natural science perspectives on global change with approaches of social science disciplines.

The elite study program combines the expertise of the Universities of Bayreuth, and Augsburg, with that of Bavarian and international research institutions, as well as economic, administrative and international organizations.

“The flexibility within the curriculum of Global Change Ecology allowed me to pursue my individual interests and develop my professional specialisation through, among others, summer schools and internships, while also building a shared knowledge base with interdisciplinary fellow students.”

Daniel K., Global Change Ecology Alumnus

conservation warming
population global warming
zoology ecology
hydrology planning
deforestation
governance
extreme events
biogeography
management
water quality
disturbance
macroecology climate change
remote sensing
ecosystem services
agroecosystems
urbanization
oceanography
measurements
adaptation
society
climatology
pollution
land cover
atmosphere

Background

The ecosystems of the earth are exposed to rapid and varied alterations of environment, such as the global changes of climate, element cycles, land use and biodiversity.

Risks to ecosystem services such as protection against natural hazards, filtration of drinking water, provision of food and other resources can be expected. Resulting consequences are a source of economic, social and political uncertainty.

“Solving global ecological problems of the future will only succeed if highly motivated and clever young people devote their energy to this enormous task.”

Prof. Dr. Carl Beierkuhnlein, Spokesperson

Structure

The general structure of the program (120 ECTS) brings together natural sciences (70 %) and social sciences (30%).

The obtained degree is a Master of Science.

The courses in the graduate program require a high level of performance. Students are selected via a standardized aptitude assessment procedure that meets the highest international criteria. Bachelor degrees related to all fields of environmental and social science will be considered for acceptance to the program. Finally, a select number of students who may profit from excellent infrastructure and direct one-on-one communication with supervisors will be accepted.

Apply by June 15th

Start in October at the University of Bayreuth

See web for more details:

[www.global-change-ecology.de -> Study -> Application](http://www.global-change-ecology.de->Study->Application)



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"Studying Global Change Ecology allowed me to meet great, highly motivated people from very different backgrounds - both within and outside the study program!"

Antonia O., Global Change Ecology Alumna

Potential Occupations

Global Change Research (Universities, Research Centers)

National Administration (Federal Agencies, Landesämter)

Political Consulting (Environmental Policy)

Business Consulting (Risk Assessment, Due Diligence)

Environmental/ Sustainability Departments of Companies (e.g. Food, Energy, Finance)

International Non- Governmental Organizations

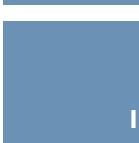
Scientific Management and Coordination

Internships

Students complete internships in the fields of research (e.g. DLR, MPI, UFZ), economics (e.g. Swiss RE), international organisations as well as governmental (e.g. BfN, UBA) and non-governmental organisations (e.g. IPBES, CITES, GIZ, WWF, IUCN). Internships at high ranking institutions are a core component of the GCE curriculum.

Modules & Courses

Course modules are subdivided into **A**, **B**, **C** and **M**. Modules **A** and **B** focus on environmental change and ecological change. The **C** module group addresses the interdisciplinary nature of global change, dealing with the integration of natural and social sciences. **M** courses aim at teaching practical skills and methods relevant for other courses. **I** and **S** modules represent the unique opportunity to credit internships and science schools as a part of the program. An additional module Research Skills **R** prepares students for the master thesis. The language of instruction is English.



In this module group, students will have the opportunity to learn about global change. The focal point is placed on the physical and chemical aspects of aquatic and terrestrial ecosystems, the dynamics of climate change, recent and historical developments, land use change as a determining factor for biotic and material changes as well as biogeochemical cycles .



Block B deals with issues of ecological change; in the associated modules, the ecological effects of global change will be addressed. Featured topics include the response of organisms and ecosystems, land use change and human impacts, as well as the impacts on species distribution within the framework of global change and changing environmental conditions.



Global environmental changes have been directly caused by anthropogenic influences. Simultaneously, society also has to bear the consequences of climate change and ecosystem changes. The module block C deals with the global interplay between societal and ecological changes, including mechanisms of global economy, policy and governance related to climate, ecosystem services, land cover and land use change, and health.



Methods courses are offered in order to deepen knowledge of methodological approaches in various fields, whereby the personal interests of students can be strengthened. The methods courses offered adhere to those applied in current global change research, including statistical modeling, time series analysis, remote sensing, spatial analysis tools, international environmental law as well as key soft skills and more.

The study of global change ecology is not only covered in course modules, but also includes the opportunity to gain practical experience via internships. Internships are possible within four main areas including economy, research, administration (national or international) and international organizations (including consortia).

Science schools aim at integrating students in current developments in the rapidly changing scientific field of global change research. Intensive external and internal courses allow for students to make direct contact with not only other lecturers and real-world practitioners but peers of other study programs, universities and countries.

