



BECC

BIODIVERSITY AND ECOSYSTEM SERVICES
IN A CHANGING CLIMATE



Vision

The vision of BECC is to provide a world-leading research environment, bringing together excellent research and training at Lund University and the University of Gothenburg, to address society's growing need for scientific knowledge to inform the consideration of biodiversity and ecosystem services in policy formulation and decision-making, regionally and globally, in the face of a rapidly changing world.



Engaging over 200 researchers at Lund University and the University of Gothenburg, BECC (Biodiversity and Ecosystem Services in a Changing Climate) brings together scientists from the natural and social sciences to perform research essential in understanding the impacts of climate change on biodiversity and ecosystem services on local, regional, national and global scales, to provide a scientific basis for the sustainable management of ecosystems and biodiversity.

What is BECC?

→ WE EXAMINE HOW CLIMATE AND ECOSYSTEMS AFFECTS BIODIVERSITY AND ECOSYSTEM SERVICES

By synthesising existing knowledge, identifying research needs, performing new observations, experiments, analysis and modelling and developing strategies that integrate the conservation of biodiversity with economically

viable production and maintenance of multiple ecosystem services, we integrate knowledge about biodiversity conservation and maintenance of multiple ecosystem services into decisionmaking on mitigation of and adaptation to climate change.

→ WE INTEGRATE ECOLOGICAL MODELLING WITH EMPIRICAL STUDIES, LINKING IT TO RESEARCH ON POLICY AND GOVERNANCE

Performing basic as well as applied research, we work to improve the performance of current ecological models, as well as developing the models of the future. Analysing patterns, trends and variability in biodiversity and ecosystem services under a changing climate at

local, regional, national and global scales, our models provide support for decision-makers at many different levels. We bring together modelling, empirical studies and link with policy and governance for sustainable management of ecosystems and biodiversity.



→ WE UNDERTAKE RESEARCH IN CLOSE COLLABORATION WITH STAKEHOLDERS

Using a stakeholder reference group, consisting of high-level representatives of government authorities, branch organisations, companies and NGOs in areas of agriculture, forestry, nature conservation and climate change, we identify societal and stakeholder needs for scientific

knowledge. We also support local, regional, national and international policy-makers through evaluation of existing policies and new options combining adaptation and mitigation strategies for climate change with conservation of biodiversity and ecosystem services.

→ WE FOSTER A NEW GENERATION OF RESEARCHERS AND EDUCATE THE SPECIALISTS OF THE FUTURE

Our research school ClimBEco (Climate, Biodiversity and Ecosystem services in a changing world) educates a new generation of researchers with the ability to address future societal grand challenges from a multidisciplinary perspective. Our researchers are active as teach-

ers Bachelor's and Master's degree programmes at Lund University and the University of Gothenburg, and supervise dozens of Bachelor's and Master's degree projects every year.

Learn more about BECC > www.becc.lu.se

BECC (Biodiversity and Ecosystem Services in a Changing Climate) is a strategic research area which brings together research on climate-ecosystem-biodiversity relationships from natural and societal perspectives at Lund University and the University of Gothenburg.

BECC facts

→ / BECC IN NUMBERS /

- ▷ BECC encompasses more than 170 senior researchers and 60 PhD-students from 10 departments at Lund University and the University of Gothenburg, Sweden.
- ▷ Since the start, BECC has recruited 14 postdoctoral fellows, half being women.
- ▷ 50% of the PhD students and 85% of the postdoctoral fellows who are directly funded by BECC come from, or have obtained their previous degree in, another country.
- ▷ More than 140 students have attended the research school ClimBEco since the program began in 2010.
- ▷ Each year, around 40 Masters students are supervised by BECC researchers.
- ▷ BECC-researchers author books, book chapters, conference articles and around 300 journal articles annually.

→ / BECC – A STRATEGIC RESEARCH AREA /

Being one of 43 Strategic Research Areas (SRAs) around 20 focus topics of high societal importance funded by the Swedish government, BECC performs research:

- ▷ that is of, or has the potential to attain, the highest international quality.
- ▷ that contributes to fulfilling major needs and solving important problems in society.
- ▷ in areas of relevance to the Swedish public and private sector.

BECC is one of two SRA's on the focus topic "Environmental change impacts on natural resources, ecosystems and bio diversity". From 2010 through 2015 BECC has received 100 million SEK in direct funding. Total funding for BECC-affiliated activities, including external funding, and co-funding by universities, amounted to 530 million SEK for the years 2010-2013. During 2014 and 2015, all SRAs were evaluated and BECC was graded as excellent.

Contributing to sustainable development

COORDINATORS

HOW HAS BECC EVOLVED FROM THE START?

The creation of BECC has resulted in increased attention from existing research groups on the relationships between biodiversity and ecosystem services in a changing climate, as evidenced by scientific publications. In particular, BECC has produced added value by combining and integrating skills from different disciplines of natural science, such as combining modelling with empirical ecology at both the universities of Lund and Gothenburg and by creating interactions between social science and natural science.

WHAT IS BECC'S MAIN CONTRIBUTION TO SUSTAINABLE DEVELOPMENT?

BECC researchers are actively supporting decision making in many different ways, by directly feeding scientific results and assessments into decision processes and by participating in national and international processes related to environmental improvement. We also help to prepare future professionals in the field of sustainable development through the research school ClimBEco and by integrating our science within academic teaching.

HOW DO YOU SEE BECC EVOLVING INTO THE FUTURE?

Based on our establishment of a successful research environment between 2010 and 2016, BECC has the potential to be a key player in the understanding, assessment and mitigation of environmental problems in the light of ongoing climate change. We also expect BECC to become increasingly involved in international research programmes.



Henrik Smith / Lund University



Håkan Pleijel / University of Gothenburg



Research examples

To have the cake and eat it – Land sharing and land sparing as synergistic rather than opposing strategies

The ultimate goals of nature conservation are to preserve biodiversity and ecosystem processes, but at the same time human demands in utilising the services provided by nature need to be met. Although these goals have often been regarded as conflicting, new BECC research shows that this need not always be the case.



To address the challenges of biodiversity conservation and commodity production, a framework has been proposed that distinguishes between the integration (land sharing) and separation (land sparing) of conservation and production. While land sharing results in higher levels of biodiversity in the production area, it also usually results in lower harvests per surface unit. More land may thus have to be used for agricultural production, leading to lower levels of total biodiversity as compared to land sparing, where the more intense production in the agricultural areas makes land available purely for conservation purposes.

Although these two strategies are often regarded as opposing, new research suggests that they may instead act synergistically, depend on and promote each other. Land sharing can, for example, favour insect-pollinated herbs in protected small meadows by improving survival of pollinating insect species relying on areas

surrounding the protected one. Furthermore, while land sparing is regarded to be optimal for conservation of unusual red-listed species with specific habitat requirements, biological diversity in the agricultural landscape (i.e. land sharing) is essential for performing many of the ecosystem services necessary for long-term sustainable agricultural production, such as control of pests and pathogens, pollination and nutrient cycling.

By taking into consideration spatial scales and the preconditions of specific landscapes, and using land sparing as well as land sharing, BECC researchers are developing new strategies that preserve rare species as well as ecosystem services in production landscapes.

For more information, please contact Johan Ekroos:
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Conservation of biodiversity and maintenance of ecosystem services

By enhancing our understanding of how species adapt, propagate and disperse under climate change in combination with habitat fragmentation and loss, we aim to develop strategies that integrate biodiversity conservation with economically viable production, at the same time maximising ecosystem services. Our research focuses on Swedish agricultural, forest and subarctic ecosystems, but also includes aquatic systems that are affected by runoff from forests and farmland. *Read more > www.becc.lu.se/research*



Stakeholder interaction close-up

– Does improved communication increase the utility of forest models in policy-making?

There is a big discrepancy in the use of dynamic models between scientists and stakeholders, most likely because dynamic models are by definition complex and difficult to understand. To increase stakeholder interest in, and utilisation of, the dynamic forest model ForSAFE in a policy context, stakeholders are invited not only to use modelling results, but to participate throughout the whole research project.

Dynamic models are useful for exploring the combined effects of climate change, atmospheric deposition and management on forest ecosystems and runoff water. However, while researchers use dynamic models as test tools, to investigate how changes in various parameters affect processes and environmental indicators, and use the information to revise process understanding, stakeholders are usually more focused on results and the uncertainties of these results.

To increase stakeholder awareness of the full potential of dynamic models as test tools, BECC researchers are working with a new form of stakeholder interaction where users such as representatives of national authorities responsible for land use are included in projects as participants, helping researchers define the aims of the project as well as choosing the scenarios to explore using the models and evaluating the results.

The ongoing project takes as a point of depar-

ture previous findings that interaction with stakeholders throughout the research process is beneficial for the subsequent utilization of research results. Experience so far suggests that stakeholder insight into the functions and properties of dynamic models will improve remarkably and the most important barriers for stakeholder participation and use of dynamic models as tools for developing management recommendations in a policy context will be identified. Furthermore, guidelines for how to overcome these barriers – both in the way science is conducted and communicated – will be designed, and stakeholder appreciation of dynamic models will increase.

For more information, please contact Cecilia Akselsson: cecilia.akselsson@nateko.lu.se

Combined effects of land use and climate change: forest

Forest research within BECC covers a number of different aspects, such as the influence of a changing climate on pests and parasites, temperature effects on tree physiology and effects of elevated carbon dioxide and air pollutants, such as ozone, nitrogen, and sulphur, on forest growth and forest soils. A key aim is to improve understanding and communication of global change impacts on forests by combining empirical information with information from mechanistic models. Using a holistic approach, our researchers evaluate current management practices and support policy-makers and stakeholders by providing information and tools for future management decisions.

Read more > www.becc.lu.se/research

Quantity over quality?

– Elevated carbon dioxide levels increase crop yield, but reduce nutritional value

Increased plant growth as a consequence of increased atmospheric concentrations of carbon dioxide (CO₂) is often regarded as one of the few positive effects of global change. However, BECC research shows that although plants may grow faster at elevated CO₂, they lose nutritional value.



That elevated CO₂ has the potential to stimulate growth in many crops is well known. However, from a human nutrition perspective, it is not only the size of the yield that is important, but also the nutritional value of the crop. For wheat, one of the most important crops worldwide, the most critical quality with regard to human nutrition is the grain protein concentration.

To elucidate the effect of elevated levels of CO₂ on wheat quality, our researchers compiled data on grain protein concentration from peer-reviewed papers from all over the world. The result? While elevated CO₂ in most cases increased grain yield, it always decreased grain protein concentration – by ten percent on average. One explanation for the negative influence of CO₂ on grain protein concentration is that the uptake of nitrogen, which is an important constituent of proteins and directly proportional to protein content, cannot keep up with plant growth (the so called dilution effect). However, in many cases the protein concentration was lower even when growth was not stimulated, indicating that elevated CO₂ levels affect either the availability of nitrogen

in soils or the nitrogen uptake mechanism in wheat.

So is this a response that is applicable to all types of plants? Yes, it seems so. When expanding their studies to include several different plant species, among them crops, grassland species and forest species, from eight countries on four different continents, our researchers found similar results. Just as in the first study, this was also true in the absence of growth stimulation. This negative effect of elevated CO₂ on nitrogen uptake in plants may explain why many ecosystems show no additional growth in response to elevated levels of CO₂, despite the so-called fertilising effect commonly attributed to CO₂.

Although decreased nutritional value of crops may not be life-threatening in the western world, lower protein concentrations in crops may be a serious concern to people in developing societies with a low food intake that is primarily based on plants.

For more information, please contact Johan Uddling:
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Combined effects of climate change and land use: agriculture

Focusing on trade-offs and synergies between provisioning and regulating ecosystem services, BECC addresses both direct and indirect impacts of global change on agricultural systems. Furthermore, we develop methods and models to evaluate the consequences of different management and policy options and study how mitigation and adaptation activities in agriculture feed back to the socio-economic and governance system; doing all of it in close collaboration with our stakeholders. *Read more > www.becc.lu.se/research*



Eat or heat?

– Assessing the fate of future cropland applying a global land-use model

Terrestrial ecosystems provide multiple services to society. Producing food as well as fibre, the demand on land is increasing as populations grow, dietary preferences shift and the need for bioenergy increases. Considering socio-economic processes and using a global land-use model, our researchers analyse potential pathways for the future and offer decision support for policy-makers on a global scale.

Global agricultural production has almost tripled in recent decades. Expanding croplands and pastures as well as the intensification of agriculture have contributed to this increase, together resulting in considerable environmental degradation, and contribution to climate change. Transitioning towards sustainable agricultural land use is thus one of the major challenges of the 21st century.

Using the global Parsimonius Land Use Model (PLUM), BECC researchers assess how uncertainties in the development of socio-economic drivers and processes, such as population growth, dietary shifts, technological change, and bioenergy production, affect the outcome of future land use and land-cover change, and analyse potential pathways and trade-offs to attain food security in 2050 while producing bioenergy to meet the 2°C target.

Interesting results? Definitely. Simulations show that remaining within the suggested planetary boundary for global cropland (15% of ice-free land) is not possible when aiming to ensure food security while simultane-

ously producing bioenergy that significantly contributes to strong climate-change mitigation efforts by 2050, if the current shift towards a diet rich in animal products continues. Furthermore, simulations of extreme cropland expansion, driven by high population growth, high resource-intensity, low technological change and high bioenergy demand, show a potential for terrestrial vegetation and soil to turn into a carbon source. This would accelerate climate change considerably, as the terrestrial biosphere currently removes approximately 30% of the anthropogenic carbon dioxide emissions from the atmosphere.

However, uncertainties in population development, technological change, resource intensity and land degradation enable a wide range of future scenarios with regard to agricultural land use and land cover changes.

For more information, please contact Kerstin Engström: kerstin.engstrom@nateko.lu.se

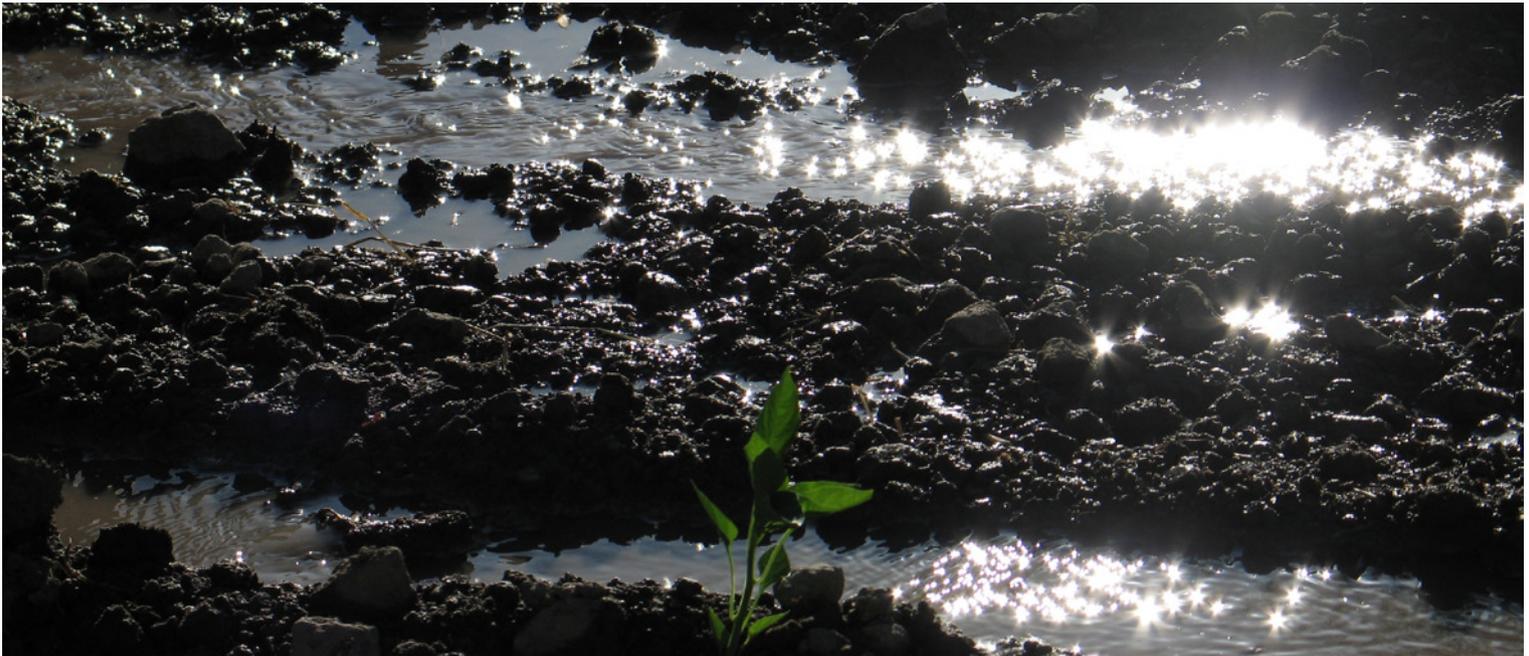
Integrated ecological modelling

Using models to analyse patterns, trends and variability in biodiversity and ecosystem services in a changing climate is central to BECC. Particular emphasis is placed on using complementary models in a coherent framework, and on combining modelling and empirical approaches, for better prediction and analysis, particularly at larger spatial and temporal scales. Furthermore, we characterise uncertainty in projections of future changes and identify and develop future scenarios for other researchers. *Read more > www.becc.lu.se/research*

Myecology on a chip

– Examining foraging fungi in soil-like microhabitats

Using a microfluidic technology, originally developed for biomedical cell culture systems, BECC researchers have succeeded in mimicking the micro-scale heterogeneity found in natural soil habitats. The new technique allows for the exploration of completely new ecological questions about soil systems in general, and soil fungal exploration and carbon sequestration in particular.



The soil environment is highly heterogeneous, both physically and chemically. Minerals and organic matter are patchily distributed and soil spaces with few or no nutrients alternate with fertile microsites in the soil. For fungi, foraging for nutrients, some materials may thus be easily accessible, while others are not, forcing the fungi to explore across desert-like areas in order to get access to them. To mimic this micro-scale heterogeneity found in natural soil habitats in laboratory environments is an issue that has long challenged the scientific community.

However, a new type of microfluidic chip, made from a material called polydimethylsiloxane (PDMS) and equipped with a maze-like system of structurally and chemically complex channels, has taken research a major step closer to solving the mystery of fungal behaviour in soils. By providing a series of randomly arranged channels with varying distances to the nutrient source, researchers can now study how far a fungus is willing to explore the soil without encountering

resources, and also how structural heterogeneity affects fungal carbon decomposition and deposition. The latter may have important implications for soil carbon storage, and consequently also atmospheric carbon dioxide levels. It may also increase our understanding of the importance of soil aggregation, and the effects of agricultural practices, i.e. ploughing, on soil structure.

Growing fungi in microfluidic chips is still in its infancy. But our researchers believe that besides testing how minute chemical or structural changes affect soil microbes, allowing the documentation of these changes down to the level of individual hyphae in a strictly controlled environment, the development of these simulated soil systems may have a wide range of other applications in microbial ecology as well as biogeochemical soil science. Exactly how wide, only the future can tell.

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Biogeochemical cycles and processes

Many biogeochemical processes that are critical to the functioning of ecosystems and their services to society are mediated by microorganisms. By using a cross-disciplinary approach that combines field and experimental studies with development and evaluation of advanced models, BECC is able to assess the combined effects of climate change and land management on microbial communities and, subsequently, on the biogeochemical processes they perform.

Read more > www.becc.lu.se/research



Interaction – why, when and with whom? – A practical guide to strengthening stakeholder interaction in the research process

Environmental and climate researchers often consider stakeholder interaction highly important. Despite this, the interactions are usually not performed in a systematic way. By highlighting the concept of evidence-based stakeholder interaction and publishing a stakeholder interaction guide, BECC intends to change this – to the advantage of researchers as well as stakeholders.

There are different views and understandings among researchers of what stakeholder interaction means. Some treat it primarily as a communication of findings, while others are more proactive, interacting with stakeholders throughout the research process. In order to increase the role research plays in the transition to a more sustainable society, stakeholder interaction efforts must be based on research findings of what makes for both effective policy and public engagement and a high quality of research.

Based on scientific literature, a survey amongst researchers in Sweden, and round table discussions with senior researchers, BECC has developed a practical guide to facilitate researchers' engagement with stakeholders.

The most important findings? The intensity of stakeholder interaction during research processes results in both benefits and risks for the quality of research. Understanding how to enhance benefits and avoid risk

by excellent planning is therefore crucial! At the same time as plans are made for the research itself, plans should also be made for stakeholder and policy interaction. Time has to be invested in mapping the stakeholders and identifying their interests as well as well as deciding on how and when to interact. Furthermore, it is acknowledged that different strategies for stakeholder interaction can exist side by side. An alternative to focusing solely on science communication as stakeholder interaction, the emphasis in the guide is on developing a systematic approach where understanding the needs and priorities of stakeholders and how and when to interact is an important starting point. Sounds interesting? The guide will soon be available online.

For more information, please contact Daniel Slunge: daniel.slunge@economics.gu.se,
or Åsa Knaggård: asa.knaggard@svet.lu.se

Support regional, national and international policymakers

By bringing together expertise in political, economic and natural science, BECC provide the scientific basis for developing integrated policy strategies that can effectively tackle problems of climate change, deforestation and biodiversity loss simultaneously. We provide analysis for policy, by developing and using scenarios as input for policy strategies, as well as analysis of policy, in terms of critically evaluating how current policies benefit the provision of ecosystem services, biodiversity protection and climate change mitigation and adaptation.

Read more > www.becc.lu.se/research

”Excellent evaluation”

“This is an SRA which focus on the effects of climate change on natural resources, ecosystem services and biodiversity that utilises genuine collaboration between LU (78%) and University of Gothenburg (22%). The number and quality of their publications is impressive, with a high percentage of their papers in the top 10% and top 1% most cited papers in the World of Science. These papers address the needs of society in Sweden and internationally. The SRA funding has been used to create a common research environment that can contribute to important research questions. The SRA has a board that supports their development by ensuring a strategic allocation of the funding. There is also a stakeholder panel which oversees and guide the research programme and a communication office that has helped facilitate the translation of the science for the public.

There are excellent networks established with agriculturalists and foresters, science and technology in the industry, government policymakers and relevant international bodies. There is a good integration of the research with education at Masters, PhD and Post-doctoral levels and a joint graduate training programme. The programme is well organized with a strong strategy and solid management framework and infrastructure for effective development.”

*From the BECC evaluation of the strategic research area initiative 2010-2014
by the Swedish Research Council*

A photograph of a dirt road winding through a forest. The road is the central focus, leading from the foreground into the distance. The forest is composed of tall, thin trees, some with autumn-colored foliage. The lighting is bright, creating strong shadows on the road. A white rectangular box is overlaid on the right side of the road, containing the word "Collaboration" in a bold, brown, serif font.

Collaboration

Collaborations has four main goals in BECC:

→ TO BRING TOGETHER THE RANGE OF EXPERTISE NEEDED TO EFFECTIVELY TACKLE COMPLEX ENVIRONMENTAL PROBLEMS

The causes, impacts and feedbacks behind global and regional environmental changes span across the domains of traditional academic disciplines. A substantial part of our research is thus carried out in collaborative research projects and networks involving national, Nordic and European partners from a wide range of academic disciplines.

Our researchers are involved in many EU-funded

collaborations, in some cases as coordinator. BECC-researchers lead INTERACT, an international network for terrestrial research and monitoring in the Arctic. The Swedish node of the Integrated Carbon Observation System (ICOS), a European infrastructure for atmospheric and ecosystem monitoring of greenhouse gas production and exchange, is coordinated from Lund University.

→ TO PERFORM RESEARCH RELEVANT TO SOCIETY

A prerequisite for providing a scientific basis for sustainable management decisions and societal policies on biodiversity and ecosystem services in a changing climate is a close collaboration with practitioners and decision-makers. We interact with authorities, NGOs and the private sector, on local, regional, national as well as international levels, to identify research needs associ-

ated with problems society will potentially face in order to adapt to, mitigate or manage environmental change. In particular, we focus on how agricultural and forest management can integrate values of ecosystem services to meet both production goals and environmental objectives.

→ TO INFLUENCE RESEARCH AGENDAS AT THE INTERNATIONAL RESEARCH FRONT

Global change research is strongly organised by umbrella programmes and networks. Our researchers are active in or involved at leadership level in the Global Carbon Project, PAGES (palaeo-science), Global Land Project (land use-ecosystem interactions), iLEAPS (biogeochemical

feedbacks to climate) and Baltic Earth. The Earth System Governance project is led from the secretariat at Lund University. Many projects and networks directed by BECC researchers, or involving them, contribute to goals elaborated by these programmes.

→ TO EDUCATE THE SPECIALISTS OF THE FUTURE

Education is an important part of our knowledge transfer, communication and collaboration. The study programs within the BECC research area (such as environmental science, physical geography, political science, geology, economics, and biology) provide students with advanced skills in synthesis, interpretation, critical analysis and communication of science-based knowledge

and research results. Students also learn to assess risks and make informed decisions under imperfect knowledge of facts. Many students do their thesis work outside the universities at authorities or private enterprises and many programs engage employees of companies, agencies and authorities as teachers.

/ BECC RESEARCHERS IN EXPERT ROLES /

- ▷ Lead authors and reviewers in three working groups of the IPCC Fifth Assessment Report.
- ▷ Experts on the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES).
- ▷ Experts on international environmental conventions on Biological Diversity and Long-Range Transboundary Air Pollution.
- ▷ Contributors to the Arctic Resilience Interim Report.
- ▷ Contributors to the International Union of Forest Research Organizations (IUFRO) global assessment of REDD+.
- ▷ Involvement in national policy making at many different levels, for example in the environmental research committee of the Ministry of the Environment, The Scientific Council for Sustainable Development of the Swedish Government and the Mistra Council for Evidence-based Environmental Management (EviEM).
- ▷ Experts providing commissioned reports and research syntheses to among others the Board of Agriculture, the County Administration of West Götaland, Lund Municipality, and as experts in joint studies with for example Skåne Regional Council and the Forest Agency.

Participants



Participating Universities

Lund University (LU) is ranked as one of the world's top 100 higher education institutes. With 41,000 students and 7,500 employees, Lund University tackles complex problems and global challenges and works to ensure that knowledge and innovations benefit society. Lund University cooperates with 600 partner universities in over 70 countries. The University hosts the new synchrotron radiation facility MAX IV Laboratory – one of the world's foremost research facilities for materials research.

The University of Gothenburg (UGOT) meets societal challenges with diverse knowledge. 37 000 students and 6 000 employees make the University a large and inspiring place to work and study, with a continuous flow of new knowledge and ideas.

Strong research and attractive study programmes attract scientists and students from all around the world. The University of Gothenburg is environmentally certified and works actively for sustainable development. With new knowledge and new perspectives, the University of Gothenburg contributes to a better future.

Participating Departments

LUND UNIVERSITY

- ▷ Centre for Environmental and Climate research
- ▷ Department of Biology
- ▷ Department of Human Geography
- ▷ Department of Physical Geography and Ecosystem Science
- ▷ Department of Geology
- ▷ Department of Political Science
- ▷ Department of Mathematical Statistics

UNIVERSITY OF GOTHENBURG

- ▷ Department of Earth Sciences
- ▷ Department of Biological and Environmental Sciences
- ▷ School of Business, Economics and Law, Department of Economics

Find all BECC participants at:
www.becc.lu.se/participants

Contact

Biodiversity and Ecosystem Services in a Changing Climate (BECC) brings together research on climate-ecosystem-biodiversity relationships from natural and social science perspectives at Lund University and the University of Gothenburg.

→ www.becc.lu.se

The Centre for Environmental and Climate Research (CEC) at Lund University is the organizational node and coordinates activities at involved departments at both Universities. BECC is led by a coordinator and two deputy coordinators with administrative support at the centre.

→ www.cec.lu.se/contact

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BECC brings together complementary research fields in order to predict the direct and indirect impacts of climate change on biodiversity, ecosystems and ecosystem services. The research has both natural and social science perspectives and concerns local, regional, national and global scales.

BECC (Biodiversity and Ecosystem Services in a Changing Climate) is a Strategic Research Area which brings together research on climate-ecosystem-biodiversity relationships from natural and societal perspectives at Lund University and the University of Gothenburg.

BECC develops research which helps to highlight and strengthen ecosystem services in a changing world marked by climate change and loss of biodiversity. We examine how human influence on climate and ecosystems affects biodiversity and ecosystem services from local to global scales and how this knowledge can be integrated into decisions on mitigation or adaptation to these changes.

BECC is a research environment based on complementary research by more than 200 researchers at Lund University and the University of Gothenburg. BECC's strength is the community of existing and successful research leaders and researchers from many different disciplines. Together we have built and developed BECC to be a stimulating scientific environment meeting society's needs for interdisciplinary knowledge.

www.becc.lu.se



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