

Stewardship Climate Fisheries boundaries Ecosystem Networks Adaptive Resilience Hypoxia  
 Governance Nutrient services  
 Baltic Anthropocene Arctic Aquaculture  
 Urban Watershed Phosphorus Complexity Planetary Innovation Transformation  
 Biodiversity



# Annual Report 2011 Stockholm Resilience Centre

A centre with:





## Stockholm Resilience Centre Annual Report 2011

---

Chair's preface	4
Directors' view	5
Research framework	6
Research highlights	8
Scientific publications	10
Highlights of projects and collaborations	14
Nobel Laureate Symposium	16
Seminars and events	20
Science, policy & practice	22
Education	26
Appendices	28

# Chair's preface

Since its launch in 2007, Stockholm Resilience Centre (SRC) has established itself as an international partner on human-environment research and global sustainability. Based on a core grant from the strategic research foundation Mistra, a major key to its success has been the integration of natural and social sciences. The fruits of this interdisciplinary merger are best reflected by the increased proportion of publications appearing in social and interdisciplinary science journals. Such publications represented less than one-third of SRC's total scientific production four years ago, but now make up approximately 40%, undoubtedly indicating a growth in cross-faculty research outputs.

Any explanation for SRC's progress would be incomplete without highlighting the work of the Baltic Nest Institute (BNI), an integral part of SRC. BNI's scientific assessments and models for the management of large marine ecosystems have rightfully placed this institute at the very forefront when it comes to connecting science with policy and practice. The models and research efforts produce important scientific insights and are continuously used, for example as decision support for HELCOM, the regional governance body of the Baltic Sea.

2011 was particularly important in bridging science to policy and practice. This was the first year the SRC used its own convening capacity to host a high-level dialogue on resilience and sustainability. The 3rd Nobel Laureate Symposium on Global Sustainability was organised together with the Royal Swedish Academy of Sciences, the Beijer Institute of

Ecological Economics, Stockholm Environment Institute, Stockholm University and the Potsdam Institute for Climate Impact Research. Centre research on social-ecological interactions and resilient systems formed the scientific backbone of the symposium discussions. Three background papers were produced ahead of the symposium, which were later published in a special issue of the Academy's scientific journal *Ambio*. The outcome of the symposium discussions was the Stockholm Memorandum, summarising the challenges and opportunities for a transformation towards global sustainability.

Overall, the centre will continue to be a global reference point for social-ecological research and to generate new insights on the pressing challenges of our time.



*Professor Arild Underdal  
Chair of the Board*

---

## Vision & Mission

The vision of the Stockholm Resilience Centre is a world where social-ecological systems are understood, governed and managed, to enhance human wellbeing and the capacity to deal with complexity and change, for the sustainable co-evolution of human civilizations with the biosphere.

The mission of Stockholm Resilience Centre is to advance research for governance and management of social-ecological systems to secure ecosystem services for human wellbeing and resilience for long-term sustainability. We apply and further develop the scientific advancements of this research within practice, policy and academic training.

# Directors' view

**All research conducted** at Stockholm Resilience Centre departs from an ambition to better understand the complex interactions between social and ecological systems. A resilience framework guides all our research and helps us develop a vision of sustainable co-evolution between human civilisations and the biosphere. To succeed in our work, we combine and connect the social science and humanities dimensions with systems ecology, resilience theory and earth system science. The result? An evolving integrative science of social-ecological systems, embedded in the dynamics of a constantly changing biosphere, shaped by humans.

In order to support and further evolve this interdisciplinary integration, 2011 was a year of reflection, taking stock of where we are and clarifying our focus for the future. Three processes were particularly important in this context. The first were the theme leader gatherings in 2011. During these meetings, we decided to take a step back and assess our scientific contributions. Out of this process came a new series of 'Research Insights'. These insights provide a synthesis of our core research areas, crystallising our perspectives and contributions to sustainability science. The work on the insights is well under way and will continue in 2012.

Closely related to this is the encouraging fact that our publications are internationally recognised as innovative and are cited and praised by our peers and continuously accepted for publication in top scientific journals. A second process worth mentioning is the Nobel Laureate Symposium on Global Sustainability, which we co-hosted in May 2011. This symposium established SRC as an international convener for high-level discussions on global sustainability, while the production of three background papers further clarified our focus on resilience and the need for social-ecological transformations in the context of planetary boundaries, planetary opportunities and planetary stewardship.

Finally, we revised our teaching and training, as well as our inhouse seminar series, to bring these activities truly into tune with our vision and mission. The critical cement in the web of all activities is the professionalism of our administration and communication staff.

In 2012 we will continue the path of performing research at the forefront of social-ecological systems and global challenges, and apply and develop the scientific advancements of this research within practice, policy and academic training. We have successfully recruited new staff, established new research positions and received new grants that will help make this possible. Our new Master's programme on social-ecological resilience for sustainable development is now fully up and running. This offers our international group of students an introduction to systemsbased methods and the development of new approaches to the management and governance of social-ecological systems.

This year also marks the complete integration of our new Resilience and Development programme. Formerly named SwedBio, this Sida-funded programme effectively bridges knowledge and practice and facilitates arenas for dialogue between actors and stakeholders on issues such as biodiversity, ecosystem services and poverty alleviation. Through all our work, we continue to evolve as a truly integrated research centre, committed to scientific excellence, while engaging actively in the bridging of knowledge between science, policy and practice.



*Johan Rockström,  
Centre director*



*Carl Folke,  
Science director*



*Olof Olsson,  
Deputy director*

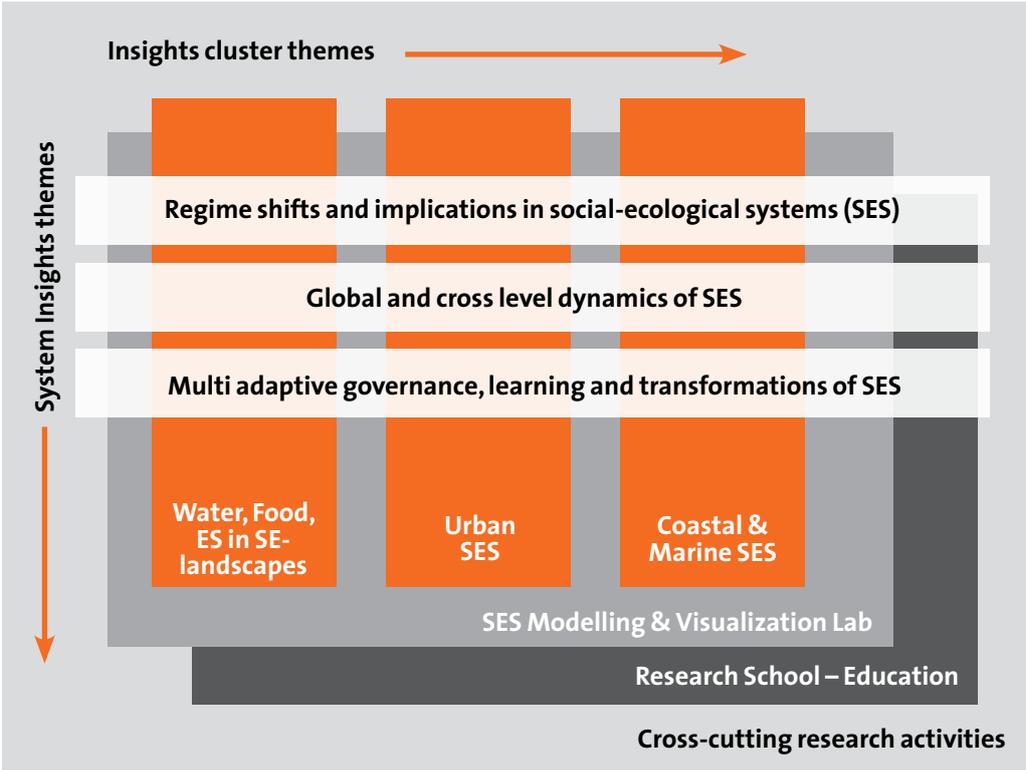
# Research framework

The research framework of Stockholm Resilience Centre emphasises that all people are dependent on the collective work of the Earth’s ecosystems – the biosphere and its generation of critical ecosystem services.

Humanity has emerged as a major force in the operation of the biosphere, with a significant imprint on the Earth system. It is time to redefine our relationship with the biosphere, and translate this into operational governance and management to enable sustainable futures. We are confronted with a new scientific endeavour – to generate insights supporting transformations of societal development towards respecting planetary boundaries and cultivating global resilience for sustainability. SRC will tirelessly advance the scientific understanding and theory of social-ecological systems, recognising that many social-ecological research processes involve collaborations of diverse knowledge systems and actors, and with the focus on governance and stewardship of ecosystem services in dynamic landscapes and seascapes in the new global context. SRC research and collaboration on

truly integrated social-ecological systems and resilience evolve around six interacting themes.

In addition to scientific activity and progress within and across research themes, 2011 was a year of reflection, further clarifying the SRC research focus on dynamic, complex and interdependent social-ecological systems. At the theme leader gatherings, we initiated a process to assess our scientific contributions so far and a new series of SRC publications ‘Research Insights’ emerged. These insights provide a brief synthesis of core areas of SRC research, clarifying perspectives and contributions. Six such publications were produced in 2011 and several more are in the pipeline. Unfamiliar or unexpected findings from single publications are put together as ‘Surprising Insights’ and, in addition, we list on our website the most cited and most requested publications of the SRC. It is encouraging to note that several of our publications are recognised, for example by the ISI Web of Science, as Highly Cited Papers and Hot Papers forming new research fronts. They have also been reported by peers in quality assessments like the Faculty of 1000 and in editorials of top scientific journals.



Centre research and collaboration on integrated social-ecological systems and resilience evolve around six interacting themes.

Theme leaders brainstorm on the development of the Research Insights during a retreat in Stockholm, October 2011.



PHOTO



### Research Insights

A series of research insights have been developed to synthesise centre publications with core research areas. The insights clarify

several research perspectives and also identify emerging research fronts.

For 2011, the following briefs were produced:

- Adaptive governance
- Regime shifts
- Transformations
- Social-ecological innovations
- Combining knowledge systems
- Social-ecological traps

Read more and download the briefs at [stockholmaresilience.su.se/insights](http://stockholmaresilience.su.se/insights)

# Research highlights

Stockholm Resilience Centre has firmly established itself as an international, transdisciplinary partner on resilience and sustainability. The work conducted during 2011 cemented that position.

Since the establishment of SRC in 2007, our researchers have generated close to 300 articles in scientific journals, 12 books and more than 120 book chapters. This year alone we published some 80 articles, six books, two special journal issues and about 35 book chapters. Governmental reports, popular science and outreach articles were also produced and some 15 articles in press appeared online in 2011.

Scientific papers have been published in well over fifty different scientific journals, including journals such as Nature, Science, PNAS, Trends in Ecology and Evolution, and Frontiers in Ecology and the Environment. Papers have also been published in interdisciplinary journals such as Global Environmental Change, Ecological Economics, Ecology & Society, Annual Review of Environment and Resources, World Development, and Ambio. A number of papers have appeared in journals devoted to

marine, water, food and urban issues, and also in specialist journals such as Limnology and Oceanography, Landscape Ecology and Public Administration and Current Anthropology.



## Stora Karlsö

One of the team-building highlights of the year was the three-day staff trip to Stora Karlsö, on 4-6 September. This island, which is the second oldest nature reserve in the world, is first and foremost known for its abundant bird life, in particular the many colonies of breeding common murre (guillemots) and razorbills.

## Awards

Professor Carole Crumley was awarded the Johan August Wahlberg medal in gold 2011 by the Swedish Society for Anthropology and Geography.

Centre researcher Henrik Österblom was awarded the Askö Young Scientist Award for his research contribution to understanding how human activities influence the Baltic Sea ecosystem at large scales.





# Scientific publications

PHOTO EVA KYLBERG/AZOTE



## Save a third for the birds

Successful seabird breeding depends on access to one third of the world's fish.

Cury, P.M., I.L. Boyd, S. Bonhommeau, T. Anker-Nilssen, R.J.M. Crawford,

R.W. Furness, J.A. Mills, E.J. Murphy, H. Österblom, M. Paleczny, J.F. Piatt, J.-P. Roux, L. Shannon, and W.J. Sydeman. 2011. *Global seabird response to forage fish depletion: one-third for the birds.* *Science* 334:1703-1706.



PHOTO TOM HERMANSSON SNICKARS/AZOTE

## Reconnecting to the Biosphere

We seem to have disconnected ourselves from nature, it's high time to reconnect, scientists argue.

Folke, C., Å. Jansson, J. Rockström, P. Olsson, S.R. Carpenter, F.S. Chapin, A.-S. Crepin, G. Daily, K. Danell, J. Ebbesson, T. Elmqvist, V. Galaz, F. Moberg, M. Nilsson, H. Österblom, E. Ostrom, Å. Persson, G. Peterson, S. Polasky, W. Steffen, B. Walker, and F. Westley. 2011. *Reconnecting to the Biosphere.* *Ambio* 40:719-738.



PHOTO ANNETTE LÖF/AZOTE

## Tipping towards sustainability

Science calls for ecologically literate innovation.

Westley, F., P. Olsson, C. Folke, T. Homer-Dixon, H. Vredenburg, D. Loorbach, J. Thompson, M. Nilsson, E. Lambin, J. Sendzimir, B. Banarjee, V. Galaz, and S. van der Leeuw. 2011. *Tipping towards sustainability: emerging pathways of transformation.* *Ambio* 40:762-780.



PHOTO KERSTIN JONSSON/AZOTE

## From hunter-gatherers to planetary stewards

Human global imprint so large we risk triggering abrupt or even irreversible changes.

Steffen, W., Å. Persson, L. Deutsch, J. Zalasiewicz, M. Williams, K. Richardson, C. Crumley, P. Crutzen, C. Folke, L. Gordon, M. Molina, V. Ramanathan, J. Rockström, M. Scheffer, H.J. Schellnhuber, and U. Svedin. 2011. *The Anthropocene: from global change to planetary stewardship.* *Ambio* 40:739-761.

## New centre book on adapting institutions

Provides cutting-edge insights into resilience and adaptive governance.



Boyd, E. and C. Folke (eds.). 2011. *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience.* Cambridge University Press, Cambridge, UK. 290 pp. Cambridge, UK. 290 pp.



PHOTO NILS KAUTSKV/AZOTE

## Trading with coral reef resilience

Difficult trade-off between parrotfish trade and protecting crucial ecological functions.

Thyresson, M. M. Nyström, and B. Crona. 2011. *Trading with resilience: parrotfish trade and the exploitation of key-ecosystem processes in coral reefs.* *Coastal Management* 39:396-411.



PHOTO BENGT EKBERG/AZOTE

### Is feeding nine billion people possible?

Yes, but only with more sustainable agriculture, says international team of scientists.

Foley, J.A., N. Ramankutty, K.A. Brauman, E.S. Cassidy, J.S. Gerber, M. Johnston, N.D. Mueller, C. O'Connell, D.K. Ray, P.C. West, C. Balzer, E.M. Bennett, S.R. Carpenter, J. Hill, C. Monfreda, S. Polasky, J. Rockström, J. Sheehan, S. Siebert, D. Tilman, and D.P.M. Zaks. 2011. *Solutions for a cultivated planet*. *Nature* 478:337-342.



PHOTO ROB KLEINE/Flickr.com

### Caught in a gilded trap

A lobster paradise in Maine may prove to be a looming social-ecological crisis.

Steneck, R.S., T.P. Hughes, J.E. Cinner, W.N. Adger, S.N. Arnold, S.A. Boudreau, K. Brown, F. Berkes, C. Folke, L. Gunderson, P. Olsson, M. Scheffer, E. Stephenson, B. Walker, J. Wilson, and, B. Worm. 2011. *Creation of a gilded trap by the high economic value of the Maine lobster fishery*. *Conservation Biology* 25:904-912.

### The intricate patterns of a pest

New article looks at the exploration of non-convex dynamics in coupled human-nature systems.

Crépin, A-S, J. Norberg, and K.-G. Mäler. 2011. *Coupled economic-ecological systems with slow and fast dynamics: modelling and analysis method*. *Ecological Economics* 70:1448-1458



PHOTO GIANNIS STEFOU/Flickr.com

### Revisiting urban resilience

Echoes from ancient Constantinople can inspire visions for modern green urbanism.

Barthel, S., S. Sörlin, and J. Ljungkvist. 2011. *Innovative memory and*

*resilient cities: echoes from ancient Constantinople*. In: Sinclair, P.J.J., G. Nordquist, F. Herschend, and C. Isendahl (eds.). *The Urban Mind: Cultural and Environmental Dynamics*. Department of Archaeology and Ancient History, Uppsala University, Uppsala. pp 391-405.

### New book on social networks and natural resource management



First to fully explore use of social network analysis in natural resource governance.

Bodin, Ö. and C. Prell (eds.). 2011. *Social Networks and Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK. 390 pp.



PHOTO EC/ECHO/François Goemans

### Crises without borders

Abrupt ecological crises with dire societal consequences force a rethink of crisis management.

Galaz, V., F. Moberg, E.-K. Olsson, E. Paglia, and C. Parker. 2011. *Institutional and political leadership dimensions of cascading ecological crises*. *Public Administration* 89:361-380.



PHOTO JERKER LOKRANTZ/AZOTE

### Managing the great unknown

How decision theory, thresholds, scenarios and resilience can reduce risks and uncertainties.

Polasky, S., S.R. Carpenter, C. Folke, and B. Keeler. 2011. *Decision-making under great uncertainty: environmental management in an era of global change*. *Trends in Ecology and Evolution* 26:398-404.



PHOTO SVEPPA JANSSON/AZOTE

### When nature meets cities

New book introduces urban ecology and the importance of cities as integrated social-ecological systems.

Niemäla, J., J.H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James. (eds.). 2011. *Urban Ecology: Patterns, Processes and Applications*. Oxford University Press, Oxford, UK. 392 pp

PHOTO JERKER LOKRANTZ/AZOTE



## Making every drop count

How improved rainfed agriculture can boost livelihoods in semi-arid and dry land areas.

Wani, S.P., J. Rockström, and K.L. Sahrawat (eds.). 2011. *Integrated Watershed Management in Rainfed Agriculture*. CRC Press. Boca Raton, FL. 496 pp.



PHOTO NICOLAS DESAGHER/AZOTE

### A worrying chain of events

Growing global connectivity increases risks for linked crises.

Biggs, D., R. Biggs, V. Dakos, R. J. Scholes, and M. Schoon. 2011. *Are we entering an era of concatenated global crises? Ecology and Society* 16(2): 27.



PHOTO ROBERT KAUTSKY/AZOTE

### Accountable among equals

Informal governance networks can be effective, but accountability can be a challenge.

Hahn, T. 2011. *Self-organized governance networks for ecosystem management: who is accountable? Ecology and Society* 16(2):18.



PHOTO TOM HERMANSSON SNICKAR/AZOTE

### Love thy neighbour

How Balinese rice harvesting can teach us a thing or two about collaboration.

Lansing, J.S., and K.M. Fox. 2011. *Niche construction on Bali: the gods of the countryside. Philosophical Transactions of the Royal Society B* 366:927-934



PHOTO OSKAR HENRIKSSON/AZOTE

### Ecosystem services, but for whom?

Ecosystem services assessments disregard critical issues for poverty alleviation.

Daw, T.M., K. Brown, S. Rosendo, and R. Pomeroy. 2011. *Applying the ecosystem services concept to poverty alleviation: the need to disaggregate human well-being. Environmental Conservation* 38:370-379.



PHOTO JERKER LOKRANTZ/AZOTE

### What goes up must come down

Why upwind land cover in precipitationsheds is crucial to sustain precipitation in water stressed downwind areas.

Keys, P.W., R.J. van der Ent, L.J. Gordon, H. Hoff, R. Nikoli, and H.H.G. Savenije. 2011. *Analyzing precipitationsheds to understand the vulnerability of rainfall dependent regions. Biogeosciences Discuss* 8:10487-10516.



PHOTO BENT CHRISTENSEN/AZOTE

### Cod stories

Why the Eastern Baltic cod stock demonstrates the need for an ecosystem

approach to fisheries management.

Möllmann, C., T. Blenckner, M. Casini, A. Gårdmark, and M. Lindegren. 2011. *Beauty is in the eye of the beholder: management of Baltic cod stock requires an ecosystem approach. Marine Ecology Progress Series* 431:293-297.

PHOTO AUSTRALIAN CUSTOMS AND BORDER PROTECTION SERVICE



## Gangsters of the sea

How definitions of organised crime correspond with characteristics of illegal fishing.

Österblom, H., A. Constable, and S. Fukumi. 2011. *Illegal fishing and the organized crime analogy. Trends in Ecology & Evolution* 26:261-262.



PHOTO ANDRE MASLENNIKOV/AZOTE

### Curb your appetite!

The consequences and hidden potential behind a spiralling energy use in food production.

Pelletier, N., E. Audsley, S. Brodt, T. Garnet, P. Henriksson, A. Kendall, K. Kramer, D. Murphy, T. Nemecek, and M. Troell. 2011. *Energy intensity of agriculture and food systems. Annual Review of Environment and Resources* 36:223-246.



PHOTO JERKER LOKRANTZ/AZOTE

### Doing stakeholder participation the right way

Careful and correct approach key to successful merger of conservation and development.

Schultz, L., A. Duit., and C. Folke. 2011. *Participation, adaptive co-management and management performance in the World Network of Biosphere Reserves. World Development* 39:662-671.



PHOTO ROBERT KAUTSKY/AZOTE

### The social web of water management

Novel network analysis can boost water resources management in Tanzania.

Stein, C., H. Ernstson, and J. Barron. 2011. *A social network approach to analyzing water governance: the case of the Mkindo catchment, Tanzania. Physics and Chemistry of the Earth* 36:1085-1092.



PHOTO SVEN-ERIK MAGNUSSON, BIOSFÄRKONTORET KRISTIANSTADS VATTENRIKE

### River runs brown

Drivers of brownification and climate change projections suggests that Kristianstads Vattenrike Biosphere Reserve will experience extreme water flows in the future.

Tuvendal, M., and T. Elmqvist. 2011. *Ecosystem services linking social and ecological systems: river brownification and the response of down-stream stakeholders. Ecology and Society* 16(4):21.

### The search for urban resilience

Melbourne's metropolitan strategy for spatial planning in a time of uncertainty and change.

Wilkinson, C. 2011. *Strategic navigation: in search of an adaptable mode of strategic spatial planning practice. Town Planning Review* 82:595-613.



# Highlights of projects and collaborations

Stockholm Resilience Centre has developed a global research network and has signed Memorandums of Understanding with more than thirty partners.

Field work and case studies are conducted worldwide, e.g. in the Sahel, East and South Africa, South East Asia, India, Australia, South America, Europe, the Arctic, the Indian and Southern Oceans, the North Sea and the Baltic Sea, as well as in a number of major cities. Below are examples of six of our collaborative projects.

### ◀ **NEREUS: Strategies for healthy future oceans**

In an attempt to form a vision for the future, Stockholm Resilience Centre, together with Princeton University, Duke University, UNEP World Conservation Monitoring Centre and University of British Columbia, will form the scientific backbone of a new nine-year programme to study the future of the world's oceans and to monitor the impact of human activities on seafood resources.

### **City Biodiversity Outlook: SRC to co-edit first global analysis of urban impact on biodiversity and ecosystem services**

Centre researcher Thomas Elmqvist, acting on behalf of Stockholm Resilience Centre, has signed a memorandum with the Convention on Biological Diversity (CBD) to produce a global first City Biodiversity Outlook (CBO1). The City Biodiversity Outlook will be the first comprehensive global analysis of how urbanisation and urban growth impact biodiversity and ecosystem dynamics in terrestrial, freshwater and marine systems.

### **Global Dynamics and Planetary Boundaries**

SRC and the Beijer Institute of Ecological Economics jointly run the research programme Global Dynamics, Multiple Shocks and Resilience: Planetary Stewardship and Catastrophic Shifts in the Earth System, focusing on critical social-ecological links and feedbacks at the global scale, and the kinds of governance structures that can create long-term conditions/positive trajectories for human development. SRC is collaborating with Australian National University and the University of Copenhagen on improving the planetary boundaries concept and investigating the interactions between boundaries.

### **Nordic Centre of Excellence – NorMER**

SRC and its Baltic Nest Institute collaborate in NorMER – the Nordic Centre for Research on Marine Ecosystems and Resources under Climate Change, a centre of excellence programme funded by Nordforsk. The projects combine the expertise of internationally

recognised research teams from all the Nordic countries. NorMER aims to implement a broad international and multidisciplinary research strategy that explores the biological, economic and societal consequences of global climate change on fisheries resources in the Nordic region, with the primary focus on the Atlantic cod.

### **Regime shifts in the Baltic Sea**

This Formas-funded project is an interdisciplinary approach to develop assessment and scenarios for the future of the Baltic Sea, benefiting from existing models at SRC's Baltic Nest Institute. Here, a critical mass of social scientists and social-ecological researchers, including post docs and PhD students, work across disciplines, generating new findings and developing interdisciplinary syntheses, as well as engaging with key stakeholders concerning the Baltic challenge.

### **Ecosupport**

Ecosupport has developed a multi-model system tool to assess the combined effect of climate change and nutrient loads to the Baltic Sea. Model projections show that changes will occur in the marine environment in a future climate: water temperature will increase and (eventually) salinity will decrease. Warmer water changes the oxygen saturation concentrations and turnover rates of biogeochemical processes, enhancing eutrophication. Therefore, nutrient load reductions to the Baltic Sea are of even higher importance in a warmer climate. To keep water quality targets set in the HELCOM Baltic Sea Action Plan in the future, the results indicate that even further load reductions are necessary.

### **Arctic resilience report**

The Arctic Council has approved a new project for assessing resilience in the Arctic. Stockholm Resilience Centre and Stockholm Environment Institute (SEI) will lead the study, which aims to identify the potential for shocks and large shifts in ecosystems services that affect human well-being in the Arctic. It will also evaluate strategies for adaptation and transformation in the face of rapid change.



# A boost to global sustainability science

Centre research on planetary stewardship helped form the scientific backbone of the discussions during the 2011 Nobel Laureate Symposium on Global Sustainability. Three days of high-level talks ended with a suite of urgent and far-reaching recommendations delivered to the United Nations.

When the Royal Swedish Academy of Sciences telephones the winners of the Nobel Prizes in Physics and Chemistry and the Prize in Economic Sciences,

the standard opening phrase is *“this is a call from Stockholm”*.

In May 2011, a similar call was made as the 3rd Nobel Laureate Symposium on Global Sustainability gathered some 50 of the world’s most renowned thinkers and experts on global sustainability – half of them Nobel Laureates.

## Necessary actions, exciting perspectives

Organised by the Royal Swedish Academy of Sciences, Stockholm Environment Institute, Stockholm Resilience Centre, the Beijer Institute of Ecological Economics and Potsdam Institute for Climate Impact Research, the symposium took place at the Royal Swedish Academy of Sciences in Stockholm between 16–19 May.

Following up from similar meetings in Potsdam (2007) and London (2009), this third symposium provided a platform for science-policy dialogue. Over the course of three intensive days, the participants discussed climate change, decreasing biodiversity, deteriorating ecosystems, poverty and a continuously growing population.

The discussions centred around issues that form the very core of the research at Stockholm Resilience Centre: social-ecological interactions, resilient systems and the need to reconnect to the biosphere. Three background papers were produced ahead of the symposium. The production of these papers engaged a number of researchers at SRC, along with key participants from the symposium.

### A critical period, but not a hopeless one

The first paper, *Reconnecting to the Biosphere*, calls for a shift in mindset, emphasising that we shape the Earth system and are fundamentally dependent on the global ecological system to sustain our development.

The second paper, *The Anthropocene: From global change to planetary stewardship*, focuses on the great acceleration into a human-dominated geological epoch, the Anthropocene, and on identifying the Earth's safe operating space for human development.

The third paper, *Tipping towards sustainability: Emerging pathways of transformation*, explores links between agency, institutions and social-ecological innovation for redirecting human activities towards global sustainability.

All three papers, which were later published in a special issue of *AMBIO*, represented a mix of necessary actions and exciting perspectives on planetary boundaries, planetary stewardship and planetary opportunities

“Humanity has emerged as a major force in the operation of the biosphere, with a significant imprint on the Earth System, challenging social-ecological resilience not only locally and regionally but also globally,” said Carl Folke, chair of the symposium scientific committee and science director at Stockholm Resilience Centre.

But all is not doom and gloom. In fact, the bad news could well be the good news.

“There are ample examples to demonstrate the tremendous capacity we humans have in finding innovative solutions to improve our lives. We need to use this innovative capacity to reconnect ourselves to the biosphere and stay within the dynamic safe boundaries of the planet”.

### The Stockholm Memorandum

The outcome of the symposium discussions was the Stockholm Memorandum, a short but sharp document on the priorities for coherent global action. The memorandum was signed by the Nobel Laureates and handed over to the members of the UN High-level Panel on Global Sustainability, who decided to cut short their own meeting in Helsinki in order to take part in the symposium.

The memorandum urged decision-makers and societies to become active stewards of the planet, and, in particular, to achieve the Millennium Development Goals.

“The Nobel Laureate Symposium has answered this emergency call from the future: environment and development must go hand in hand. Human pressures are challenging the resilience of the planet, while inequalities remain high. The only way to move towards fair and lasting prosperity for present and future generations is along a pathway of environmental sustainability. The time for procrastination is over. We cannot afford the luxury of denial,” said Johan Rockström, Symposium chairperson and executive director of Stockholm Resilience Centre.

### From Stockholm to Rio via Durban

The Stockholm Memorandum had an immediate impact and provided crucial input to the Panel members as they prepare for the 2012 UN Conference on Sustainable Development in Rio de Janeiro (Rio +20).

The momentum of the symposium was also maintained during the UNFCCC COP17 negotiations in Durban, South Africa, in December. In a high-level dialogue, a broad-based group of political leaders, scientists and policy experts called for a strong, immediate and integrated response to climate change, sustainability and development challenges.

The event was hosted by Johan Rockström and Hans Joachim Schellnhuber, Director of the Potsdam Institute for Climate Impact Research.



PHOTO STEFAN NILSSON

The Session Hall at the Royal Swedish Academy of Sciences, venue for key discussions and the signing of the Stockholm Memorandum.

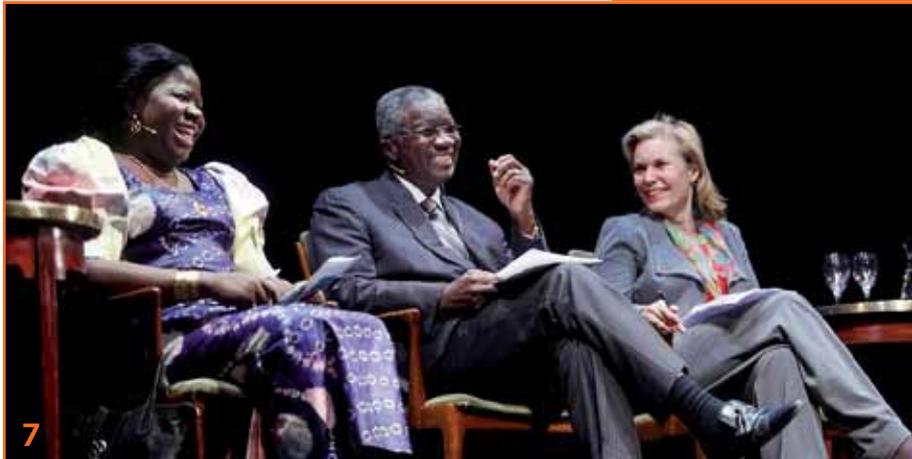


### Media coverage

The Stockholm Symposium generated a tremendous amount of media coverage internationally. More than 150 articles were produced in newspapers, scientific journals and magazines during and after the event.



International coverage included extensive attention in *The Economist*, *National Geographic*, *Nature*, *Le Monde* and *China Daily*. The event was also well covered in the Swedish media, for example by *Dagens Nyheter*, *Rapport*, *SVT Vetenskap* and *Miljöaktuellt*.





3



4



6



9



12



13

**Nobel Laureate Symposium**

- 1 HRH Crown Princess Victoria gave the inaugural speech to the Symposium.
- 2 Executive Director Johan Rockström, Chair of the 3<sup>rd</sup> Nobel Laureate Symposium.
- 3 Stina Ekblad and Ylva Ekblad read poetry by Nobel Laureate Wislawa Szymborska during the seminar Stockholm Dialogue – seizing Planetary Opportunities.
- 4 Presentation by Pavan Sukhdev, Yale University and UNEP’s Green Economy Initiative during the seminar Stockholm Dialogue – seizing Planetary Opportunities.
- 5 Eric Ericssonhallen, Stockholm, location for the Nobel Laureate Choral Concert. A choral piece was specially composed for the concert by Sven-David Sandström.
- 6 HRH King Carl XVI Gustaf meets Australian Foreign Minister Kevin Rudd during second day of the symposium.
- 7 Gunilla Carlsson, Swedish Minister for International Development Cooperation together with Luisa Dias Diogo and Prime Minister of Barbados Freundel Stuart, both members of the UN High-level Panel on Global Sustainability, during the seminar Stockholm Dialogue – seizing Planetary Opportunities.
- 8 Chefs Carola Magnusson and Leif Mannerström created the menu for the Nobel Laureate Choral Concert.
- 9 The Symposium delegates with members of the UN High Level Panel on Global Sustainability
- 10 Nadine Gordimer, Nobel Laureate in Literature 1991, reads her short story *The Ultimate Safari* on the challenges facing a family fleeing Mozambique for South Africa, as told by a young girl.
- 11 Signing of the Stockholm Memorandum, Nobel Laureate Mario Molina.
- 12 Gro Harlem Brundtland, member of the UN High Level Panel on Global Sustainability, together with Economics Laureate Amartya Sen.
- 13 Presentation by Janine Benyus, Director of Biomimicry Institute, during the seminar Stockholm Dialogue – seizing Planetary Opportunities.

ALL PHOTOS: STEFAN NILSSON

# Seminars and events

## Malin Falkenmark – celebrating four decades of ecohydrological bridge-building

Professor Malin Falkenmark's work has had a profound influence on scientific thinking concerning water and human development. In a full-day seminar on 21 October 2011, this future-orientated, 85-year old water scientist was hailed by friends and colleagues for her outstanding work over the last four decades. Never one for being the centre of attention, Professor Falkenmark preferred to have an event that would highlight some of the key issues within water management.

The seminar – *'Facing the human water security dilemma – an ecohydrological perspective'* – gathered scientists from all over the world and provided insights into a range of issues where Professor Falkenmark's work has been crucial. Professor Falkenmark herself gave a valuable retrospective of her own career.



## NESS 2011: Past and future trends in governance and change

The 10<sup>th</sup> Nordic Environmental Social Science Conference was held in Stockholm, building upon a tradition of intense workshops combined with common sessions.

The conference, which took place on 14–16 June, was a collaborative effort between Stockholm University, Stockholm Resilience Centre and Stockholm Environment Institute.

The conference was opened by SRC director Johan Rockström, who argued that this is the moment for social sciences to assist the world in a rapid transition towards global sustainability.

## Coral Guardians: Gala concert and seminar for the world's coral reefs

Using music as a force for change, Swedish soprano saxophonist Anders Paulsson decided to celebrate his 50th birthday by bringing together some of the world's leading musicians and scientists to a combined concert and seminar evening in support of the world's coral reefs.

The event, which took place at the Royal Academy of Music in Stockholm on 14 October, 2011, was co-organised by SRC partner Albaeco and featured SRC researchers Johan Rockström, Carl Folke, Per Olsson, Magnus Nyström and Fredrik Moberg.

### Stockholm Seminars 2011

*The Stockholm Seminars cover a broad range of perspectives on sustainability issues. The seminars are arranged by Albaeco, Stockholm Resilience Centre, the Beijer Institute of Ecological Economics, the International Biosphere-Geosphere Programme (IGBP) and the Swedish Secretariat for Environmental Earth System Sciences (SSEESS).*

- 28 January  
*Professor Juan Carlos Castilla*  
The 2010 Chile earthquake and tsunamis.
- 17 February  
*Dr. Compton Tucker*  
Satellite climate observations.
- 4 April  
*Dr. Jason J. Blackstock*  
Governing solar geoengineering.

- 6 May  
*Dr. François Gemenne*  
Environmental migration in a warmer world.
- 15 December  
*Prof. Claude Henry*  
Dealing with uncertainty in science and decision-making.

# The Resilience Dialogues

The Resilience dialogues are weekly internal seminars for staff and students. The purpose of the seminars is to create a space for reflection and exploration of frontier resilience research questions.

There is constant ongoing work to develop the art of having a fruitful transdisciplinary dialogue. Originally established by the Resilience Research School in 2009, the focus of the Resilience Dialogues is to create an environment for high quality scientific discussions. They build on the SRC take on resilience while offering space for developing the thinking further. The dialogues are also important for the development of the new Research insights (see page six).



## Resilience Dialogues 2011

12 January  
Why social learning and why we need top-down management in dealing with climate change.  
*Cecilia Lundholm*

26 January  
How come well-being is improving while ecosystems decline?  
*Maria Tengö, Garry Peterson & Elena Bennett*

9 February  
Crossing disciplinary boundaries to create a holistic approach: how can transdisciplinarity be taught?  
*Carole Crumley & Thomas Hahn*

24 February  
How can we develop PECS?  
*Albert Norström, Lisen Schultz, Carl Folke & Olof Olsson*

7 March  
Making use of ecosystem services.  
*Thomas Elmqvist*

23 March  
A creative academic environment.  
*Sverker Sörlin*

6 April  
Resilience 2011 – key insights presented in a speed talk format.  
*Various staff*

4 May  
The relation between policy and science – what can science “deliver” and what are the policymakers’ needs?  
*Beatrice Crona & Maria Schultz*

18 May  
Trust and social capital – a social relational perspective on resource governance.  
*Örjan Bodin*

31 May  
On complex systems.  
*Steve Lansing*

8 June  
Resistance to resilience: serious issues and misunderstandings.  
*Carole Crumley*

14 September  
Stockholm Resilience Centre Insights: How to initiate and navigate large-scale transformations in social-ecological systems.  
*Per Olsson & Carl Folke*

21 September  
How can insights from Social Network Analysis advance research on Social Ecological Systems?  
*Örjan Bodin & Annica Sandström*

28 September  
PECS update and short info on the EU application.  
*Lisen Schultz & Olof Olsson*

5 October  
What creates long-term resilience in organisations?

12 October  
Response Strategy Assessment – an addition to the toolbox for measuring resilience.  
*Magnus Tuvendal*

2 November  
Dialogue Skills – developing personal skills and reflecting on culture.  
*Guest: Emma Nilsson, KaosPilot*

9 November  
Stockholm Resilience Centre Insights: Social-Ecological traps.  
*Magnus Nyström & Carl Folke*

16 November  
How to study power and agency.  
*Carole Crumley & Wijnand Boonstra*

30 November  
A cry for help – challenges and work-arounds for using the ecosystem services concept in resilience research.  
*Juan Carlos Rocha*

14 December  
Art tapas visual, pictorial and diagrammatic representations of concepts that fall under the broad umbrella of ‘resilience thinking.’  
*Visualisations Lab, Communciations and MR students 2011*

# Science, policy and practice

## Programme on Ecosystem Change and Society (PECS)

In 2011, the international programme office of the Programme on Ecosystem Change and Society (PECS) was established at Stockholm Resilience Centre. PECS is jointly sponsored by ICSU and UNESCO and will complement the four global environmental change programmes. The PECS vision is of a world where human actions have been transformed toward stewardship of social-ecological systems for global sustainability. PECS will provide coordination, an overarching framework and a focus for research projects that investigate the resilience and dynamics of social-ecological systems and ecosystem services in landscapes and seascapes in a global context.

## Baltic Nest Institute

Through the Nest model, a unique decision support system, the Baltic Nest Institute (BNI) has become a crucial scientific basis for international decision-making on the sustainable management of the Baltic Sea.

BNI presented its research at several high-level, science-to-policy meetings in 2011. This included several HELCOM meetings and a BONUS+ seminar in Brussels that gathered representatives from the European Parliament and staff from the EU Directorate Generals. BNI also shared its expertise at the annual EU Info Day and with the Committee on the Environment, Public Health and Food Safety of the European Parliament. Insights from BNI's research were also presented at an expert workshop arranged by HELCOM and the Black Sea Commission.

In December 2011, findings from two of BNI's main projects were presented at the Recoca & Ecosupport Stakeholder conference in Stockholm. This conference provided an opportunity for scientists and stakeholders to discuss and evaluate recent developments and insights and to identify areas of uncertainties and needs for future research.

BNI's research was also presented at the Hållbara Hav 2011 – Östersjön seminar in Stockholm. Hosted by the Sustainable Seas collaboration, this seminar gathered industry, researchers and organisations to jointly promote sustainable solutions for the Baltic Sea.

## IHOPE – The Integrated History and future Of the People on Earth

In March 2011, IHOPE attended the Resilience 2011 Conference in Phoenix, Arizona, showcasing new research in six IHOPE projects and exploring complex adaptive systems from a cross-disciplinary perspective.

It will be a key event at the Planet under Pressure conference in London March 2012. In 2012, the IHOPE international project office will move to Uppsala University.

## BalticSTERN

The BalticSTERN secretariat, which is hosted by Stockholm Resilience Centre, continued its work of advancing the understanding of benefits generated by the Baltic Sea and of identifying cost effective measures and instruments for reaching environmental targets.

The FishSTERN report, the first attempt at an ecological-economic evaluation of fishery management scenarios in the Baltic Sea region, was published in spring 2011. It indicates that fisheries in the Central Baltic Sea are only profitable if the fishing pressure is low, given current stock size and fishing fleet structure.

*Baltic***STERN**



# Restoring a sustainable Baltic Sea

The centre, through its partner Baltic Nest Institute (BNI) is deeply involved in the current revision of the Baltic Sea Action Plan – an ambitious policy initiative to restore the Baltic marine environment.

The Baltic Nest Institute has been instrumental in the development of the Baltic Sea Action Plan (BSAP), one of the few Baltic Sea-related examples of successful bridging between science and policy. The BSAP clearly shows the importance of applying scientific ecosystem approaches for the management of natural resources.

The BSAP was signed by all Member States of the Helsinki Commission (HELCOM) in Krakow in November 2007. In the plan, nutrient reductions, crucial to restore the Baltic Sea from eutrophication, were given in actual numbers as tons of nitrogen and phosphorus for each sub-basin. These reductions were then allocated by setting specific quotas for each country.

The Baltic Nest Institute was deeply involved in the process and performed the actual calculations needed for all countries. A precondition for reaching the agreement were the models and databases of the Baltic Sea and the surrounding drainage basin that have been

developed by BNI. Equally important was the development of a dialogue between managers and scientists.

The BSAP is currently under revision and a final version will be presented in 2013. A number of international research projects within the EU-funded BONUS programme, in which BNI participates, have confirmed and widened the conclusions of the original BSAP included in the Krakow agreement.

“The research shows, among many other things, that a massive reduction of nutrient inputs is still needed to improve the status of the Baltic Sea environment. It is not enough to build sewage plants, efforts to reduce loads from agriculture are urgently needed,” says Fredrik Wulff, former director of BNI. The revision of BSAP calculations is now being led by Bo Gustafsson from BNI.

New data on nutrient loads and sources have become available, affecting the allocation of nutrient reductions between countries. Moreover, the environmental targets, i.e. the conditions in the marine environment that characterise an acceptable ‘healthy’ state, have been re-evaluated and expanded. The model that was used to calculate the ecological effects of nutrient reductions has been replaced by a newer version. These revisions are now being produced by BNI in close cooperation with HELCOM and several research institutes around the Baltic and elsewhere.

Blooms of cyanobacteria are a natural phenomenon in the Baltic Sea but have increased in magnitude during recent decades due to e.g. eutrophication. In 2005, such blooms were prominent in offshore and coastal areas in the region, with substantial negative impacts on tourism and water quality. Two years later, the countries involved agreed to take firm action.



PHOTO JOAKIM HANSEN/AZOTE

# The Resilience and Development Programme

New centre programme acts as a crucial facilitator of dialogue between research and governance on social-ecological systems.

In 2011, Swedbio was officially embedded into Stockholm Resilience Centre. Renamed the Resilience and Development Programme, this Sida-funded programme has established itself as a unique facilitator of dialogue between governments, scientists, civil society and indigenous organisations, as well as the private sector and think-tank organisations.

During 2011, the programme was involved in several key policy processes. It was part of the advisory committee for Sub-Global Assessments and worked as an advisor to the Swedish Ministry of Environment on capacity building regarding the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES).

In 2011, it organised a dialogue seminar together with indigenous groups and government to strengthen exchange between knowledge systems related to processes such as the IPBES and the Programme on Ecosystem Change and Society (PECS). Based on the conclusion from this first seminar, a follow-up seminar will be arranged and a report will be submitted as an information document to the second session of the IPBES plenary in Panama 2012.

Parties under the Convention on Biological Diversity have adopted a strategy for resource mobilisation. In 2011, the Resilience and Development Programme formed part of an advisory group to the UNEP World Conservation Monitoring Centre (UNEP-WCMC) regarding a report on indicators for the new strategy. In addition, a member of staff from the programme was selected by the Global Environment Facility as one of five international experts in the development of needs assessment for future funding of biodiversity.

To boost dialogue, the programme took the initiative for an international dialogue seminar between actors involved in the CBD negotiations. The purpose of the seminar is to clarify perspectives on how to scale up the mobilisation of financial resources for biodiversity.

For almost a decade, Swedbio has supported the Forest Peoples Programme, the Tebtebba Foundation and the IIFB in their work to strengthen governance in indigenous territories based on customary sustainable use. The newly adopted CBD Strategic Plan includes a target on respecting the traditional knowledge of indigenous peoples and their customary use of biological resources. This was also one of the topics discussed at a CBD expert meeting held in 2011, where staff from the programme participated as technical expert and chair.



Jokkmokk, June 2011, Swedbio organised a dialogue seminar together with indigenous groups and governments to strengthen the exchange between various stakeholders for the benefit of knowledge generation and ecosystem assessment. Onel Masardule (centred) was among the participants in the dialogue meeting. He is Director for the Panama-based indigenous organisation Fundación para la Promoción del Conocimiento Indígena.



PHOTO TOM HERMANSSON/SNICKKARS /AZOTE

# Education

2011 marked the successful launch of a new Master's programme, boosting SRC's position as an attractive starting point for future thinkers on sustainable development.

Stockholm Resilience Centre offers a variety of courses and programmes on environmental and sustainable development issues.

The new Master's programme *Social-Ecological Resilience for Sustainable Development* aims to enhance students' knowledge of the complex interactions between ecological and social systems. It focuses on using systems-based methods to develop new management approaches in order to govern such systems. The programme, which eventually will replace the two other ongoing MSc programmes, consists of one year of courses and a traineeship, and one year spent writing a Master's thesis. Despite the introduction of student fees for international students, seven of the 15 students are not Swedish. Students completing the two other Master's programmes *Ecosystems, Resilience and Governance* and *Sustainable Enterprising*, and performed fieldwork in countries such as Ghana,

Canda, Burkina Faso and Uruguay. Two students went on to become PhD students at SRC.

## The Resilience Research School (RSS)

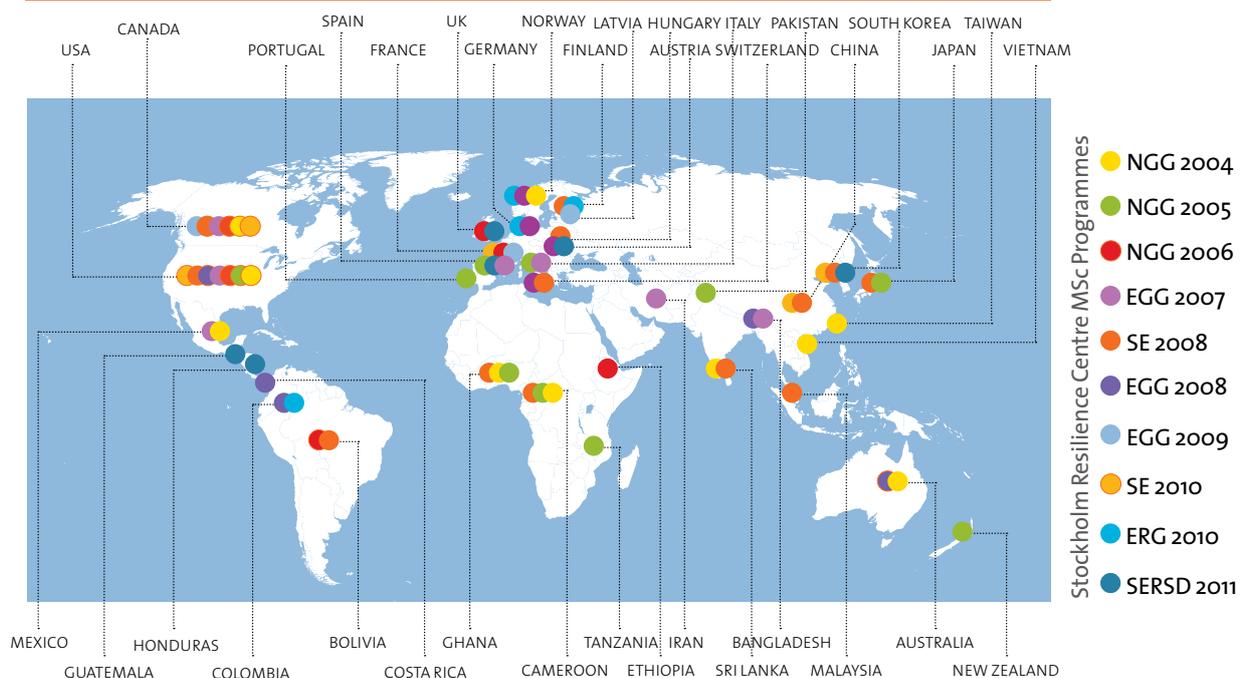
The Resilience Research School offers PhD students from Stockholm University an introduction to resilience research. The students follow SRC's own general study plan as well as that of their host department. In 2011, students attended two compulsory courses, *Resilience and the Study of Social-ecological Interactions* and *Resilience Research*. The school also arranged courses in qualitative interview methods, geographical information systems and network analysis.

## Other courses

Once again *Världens Eko*, our Swedish undergraduate course on sustainable development, was immensely popular. Initiated and driven by students, the course features leading researchers and debaters on sustainable development.

Other programmes and courses offered through the centre are *Hållbar samhällsutveckling* (60 credits) and *Sustainable Development from a Resilience Perspective* (five credits).

## Students from all over the world 2004–2011



NGG: Natural Resource Management, Governance & Globalisation. EGG: Ecosystems, Governance & Globalisation. ERG: Ecosystems, Resilience & Governance. SE: Sustainable Enterprising. SERSD: Social-Ecological Resilience for Sustainable Development. Year indicate start year for each programme. Students from Sweden are not included in the map, but represent a significant group among the students.

Master theses 2011

Ecosystems, Governance and Globalisation programme

Quentin Dilasser

Is gear-based management of herbivorous fish a viable tool to prevent or reverse phase shifts in coral reefs?: Linking resilience theory to practice

Fredrik Granath

Strategies for pollination services as a productive input in Canola production

Emmeline Laszlo Ambjörnsson

Power relations and adaptive capacity: Exploring gender relations in climate change adaptation and coping within small-scale farming in western Kenya

Andrew Merrie

An idea whose time has come: an innovation perspective on Marine Spatial Planning

Daniel Meyer

Transitions and resilience in the frozen commons: linking aquaculture, krill fishery, governance and ecosystem change in the Scotia Sea, Southern Ocean

Rolands Sadauskis

Building resilience to climate-driven regime shifts

Hanna Sterve

Factors restricting adoption of sustainable agricultural practices in a smallholder agro-ecosystem: a case study of Potshini community, upper Thukela region, South Africa

Johan Sundqvist

O tree planting, salvation and urbanization: The role of evangelical movements in adaptive capacity. Kigali, Rwanda

Josefina Oddsberg

An analysis of the potential of local stewardship as a management mode for increasing and enhancing ecosystem services in the urban landscape: Three case studies in Stockholm Municipality – Igelbäcken Allotment Garden, Akalla Allotment Garden and the Vinterviken Garden

Sustainable Enterprising programme

Pernilla Hampus

Corporate responsiveness to drivers of change: Using scenarios to improve decision making on sustainable management of complex dynamic ecosystems

Caroline Gunterberg

Fashion sourcing in China is changing: Energy perspectives on sustainable sourcing in China

Christopher Hill

Exploring the ‘Unknown Unknowns’ of Urban Farming: An ethnographic case study, in narrative form, on the last urban farm in Stockholm, Sweden

Lina Häckner

Sustainable Indicators: A case study of stakeholder perceptions and expectations on environmental sustainability reporting at Riksbyggen, a Swedish cooperative real estate company

Olivier Pessot

Small Businesses and how they connect to the Sustainable City: A list of actions for the transformation to a sustainable Paris

Fei Tong

Changing corporate social responsibility (CSR) in China: a case study of Svenska Kullagerfabriken (SKF) in China

Nicolas Castagno

The development of a Natural Resource Management Policy: a discourse analysis on soybean farming during Uruguay’s agricultural regime shift (2000–2010)



Centre Master’s student awarded scholarship for thesis on EU’s Emissions

Svensk Fjärrvärme (The Swedish District Heating Association) awarded centre student

Joel Forsberg a scholarship of SEK 20 000 for his analysis on the European Union Emissions Trading Scheme. His thesis was considered the best in the areas of heating, cooling and cogeneration.

# Appendices

## A. Finance and Funding

### Funding of activities/costs for the period 2007–2011

2007 Total	26,2	MSEK
Stockholm University	4,5	MSEK
MISTRA core grant*	5,6	MSEK
External	16,1	MSEK

\*Allocated grant from Mistra 8 MSEK

2008 Total	41,3	MSEK
Stockholm University	7,5	MSEK
MISTRA core grant*	10,1	MSEK
External	23,7	MSEK

\*Allocated grant from Mistra 10 MSEK

2009 Total	46,3	MSEK
Stockholm University*	3	MSEK
MISTRA core grant**	18,1	MSEK
External grant total	25,2	MSEK
The Swedish EPA	12,7	MSEK
Formas	7,7	MSEK
SIDA	2,7	MSEK
VR (Swedish Research Council)	0,6	MSEK
other	1,5	MSEK

\*Allocated subsidy from Stockholm University 8 MSEK

\*\*Allocated grant from Mistra 15 MSEK

2010 Total	59,3	MSEK
Stockholm University*	7	MSEK
MISTRA core grant**	18	MSEK
External grant total	34,3	MSEK
Formas	12,9	MSEK
The Swedish EPA	11,7	MSEK
Mistra grant to Baltic Nest Institute	3,4	MSEK
SIDA	2	MSEK
Futura	1,2	MSEK
SLU	1,1	MSEK
EU	0,6	MSEK
other	1,4	MSEK

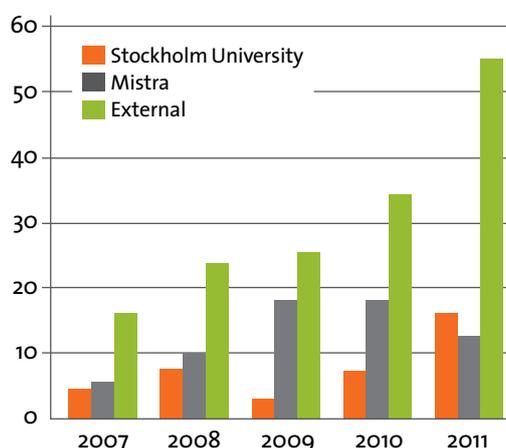
\*Allocated subsidy from Stockholm University 8,8 MSEK

\*\*Allocated grant from Mistra 15,8 MSEK

2011 Total	83,6	MSEK
Stockholm University*	16,1	MSEK
MISTRA core grant**	12,4	MSEK
External grant total	55,1	MSEK
The Swedish EPA	13,1	MSEK
Formas	12,2	MSEK
SIDA	7	MSEK
SIDA (Swedbio)	17,6	MSEK
Futura	1,3	MSEK
Schwartz	1,1	MSEK
The Royal Swedish Academy of Sciences	1,1	MSEK
EU	0,3	MSEK
other	1,4	MSEK

\*Allocated subsidy from Stockholm University: 11,8 MSEK core fund plus external Formas funding via faculty 6,1 MSEK

\*\*Allocated grant from Mistra 16 MSEK



Distribution of costs (MSEK)

# B. Centre Publications 2011

## Scientific publications

### Books

Bodin, Ö. and C. Prell (eds.). 2011. *Social Networks and Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK. 390 pp.

Boyd, E. and C. Folke (eds.). 2011. *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience*. Cambridge University Press, Cambridge, UK. 290 pp.

Krasny, M., C. Lundholm, and R. Plummer (eds.). 2011. *Resilience in Social-Ecological Systems: The Role of Learning and Education*. Routledge, London. 224 pp.

Niemäla, J., J.H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James. (eds.). 2011. *Urban Ecology: Patterns, Processes and Applications*. Oxford University Press, Oxford, UK. 392 pp.

Söderqvist, T., A. Sundbaum, C. Folke, and K.-G. Mäler (eds.). 2011. *Bringing Ecologists and Economists Together: The Askö Meetings and Papers*. Springer Verlag, Heidelberg. 246 pp.

Wani, S.P., J. Rockström, and K.L. Sahrawat (eds.). 2011. *Integrated Watershed Management in Rainfed Agriculture*. CRC Press. Boca Raton, FL. 496 pp.

### Special journal issues

Blenckner, T., T. Nöges, L. Tranvik, K. Pettersson, and R. Naddafi, guest editors. 2011. *European Large Lakes II. Vulnerability of large lake ecosystems – Monitoring, management and measures*. Hydrobiologia volume 660

Folke, C., and J. Rockström, guest editors. 2011. *3rd Nobel Laureate Symposium on Global Sustainability: Transforming the World in an Era of Global Change*. Ambio volume 40 no 7.

### Journal articles

Adger, W.N., K. Brown, D. Nelson, F. Berkes, H. Eakin, C. Folke, K. Galvin, M. Goulden, L. Gunderson, K. O'Brien, J. Ruitenbeek, and E. Tompkins. 2011. *Resilience implications of policy responses to climate change*. WIREs Climate Change 2:757–766.

Andersson, J.C.M., A.J.B. Zehnder, J. Rockström, and H. Yang. 2011. *Potential impacts of water harvesting and ecological sanitation on crop yield, evaporation and river flow regimes in the Thukela River basin, South Africa*. Agricultural Water Management 98:1113–1124.

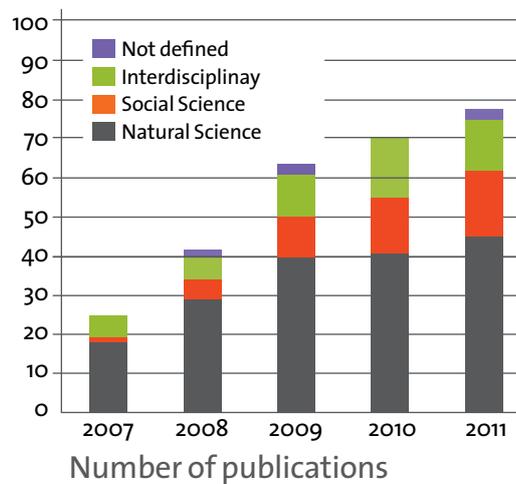
Andrejev, O., T. Soomere, A. Sokolov, and K. Myrberg. 2011. *The role of the spatial resolution of a three-dimensional hydrodynamic model for marine transport risk assessment*. Oceanologia 53:309–334.

Baggio, J.A., K. Salau, M.A. Janssen, M.L. Schoon, and Ö. Bodin. 2011. *Landscape connectivity and predator-prey population dynamics*. Landscape Ecology 26:33–45.

Balducci, A., L. Boelens, J. Hillier, T. Nyseth, and C. Wilkinson. 2011. *Strategic spatial planning in uncertainty: theory and exploratory practice*. Town Planning Review 82:595–613.

Barron, J., and S. Noel. 2011. *Valuing soft components in agricultural water management interventions in meso-scale watersheds: a review and synthesis*. Water Alternatives 4:145–155.

Biggs, D., R. Biggs, V. Dakos, R. J. Scholes, and M. Schoon. 2011. *Are we entering an era of concatenated global crises?* Ecology and Society 16(2): 27.



Boonstra, W.J., J. Ahnström, and L. Hallgren. 2011. *Swedish farmers talking about nature: a study of the interrelations between farmers' values and the sociocultural notion of naturintresse*. Sociologia Ruralis 51:420–435.

Boonstra, W.J. 2011. *Hobbes' erfenis [Hobbes' Legacy]*. Sociologie 7:183–189.

Borgström, S., S. Cousins, and R. Lindborg. 2011. *Outside the boundary: land use changes in the surroundings of urban nature reserves*. Applied Geography 32:350–359.

Boyd, E., and M.K. Goodman. 2011. *The clean development mechanism as ethical development?: reconciling emissions trading and local development*. Journal of International Development 23:836–854.

May, B., and R. Plummer. 2011. *Accommodating the challenges of climate change adaptation and governance in conventional risk management: adaptive collaborative risk management (ACRM)*. Ecology and Society, 16(1), 47.

- Cinner, J.E., C. Folke, T. Daw, and C. Hicks. 2011. *Responding to change: using scenarios to understand how socioeconomic factors may influence amplifying or dampening exploitation feedbacks among Tanzanian fishers*. *Global Environmental Change* 21:7–12.
- Conley, D.J., J. Carstensen, J. Aigars, P. Axe, E. Bonsdorff, T. Eremina, B.-M. Haahti, C. Humborg, P. Jonsson, J. Kotta, C. Lännegren, U. Larsson, A. Maximov, M. Rodriguez Medina, E. Lysiak-Pastuszek, N. Remeikaitė-Nikiėnė, J. Walve, S. Wilhelms, and L. Zillén. 2011. *Hypoxia is increasing in the coastal zone of the Baltic Sea*. *Environment, Science, and Technology* 45:6777–6783.
- Crépin, A.-S., J. Norberg, and K.-G. Mäler. 2011. *Coupled economic-ecological systems with slow and fast dynamics: modelling and analysis method*. *Ecological Economics* 70:1448–1458.
- Crona, B.I., and J.N. Parker. 2011. *Network determinants of knowledge utilization: preliminary lessons from a boundary organization*. *Science Communication* 33:448–471.
- Crona, B.I., and S. Rosendo. 2011. *Outside the law? analyzing policy gaps in addressing fishers' migration in East Africa*. *Marine Policy* 35:379–388.
- Cury, P.M., I.L. Boyd, S. Bonhommeau, T. Anker-Nilssen, R.J.M. Crawford, R.W. Furness, J.A. Mills, E.J. Murphy, H. Österblom, M. Paleczny, J.F. Piatt, J.-P. Roux, L. Shannon, and W.J. Sydeman. 2011. *Global seabird response to forage fish depletion: one-third for the birds*. *Science* 334:1703–1706.
- Daw, T.M., K. Brown, S. Rosendo, and R. Pomeroy. 2011. *Applying the ecosystem services concept to poverty alleviation: the need to disaggregate human well-being*. *Environmental Conservation* 38:370–379.
- Daw, T.M., J.E. Cinner, T.R. McClanahan, N.A.J. Graham, and S.K. Wilson. 2011. *Design factors and socioeconomic variables associated with ecological responses to fishery closures in the western Indian Ocean*. *Coastal Management* 39:412–424.
- Daw, T.M., J. Robinson, and N.A.J. Graham. 2011. *Perceptions of trends in Seychelles artisanal trap fisheries: comparing catch monitoring, underwater visual census and fishers' knowledge*. *Environmental Conservation* 38:75–88.
- Eilola, K., B.G. Gustafsson, I. Kuznetsov, H.E.M. Meier, T. Neumann, and O.P. Savchuk. 2011. *Evaluation of biogeochemical cycles in an ensemble of three state-of-the-art numerical models of the Baltic Sea*. *Journal of Marine Systems* 88:267–284.
- Enfors, E., J. Barron, H. Makurira, J. Rockström, and S. Tumbo. 2011. *Yield and soil system changes from conservation tillage in dryland farming: a case study from North Eastern Tanzania*. *Agricultural Water Management* 98:1687–1695.
- Falkenmark, M. 2011. *Water: a reflection of land use: understanding of water pathways and quality genesis*. *International Journal of Water Resources Development* 27:13–32.
- Faxneld, S., T.L. Jörgensen, N.D. Nguyen, M. Nyström, and M. Tedengren. 2011. *Differences in physiological response to increased seawater temperature in nearshore and offshore corals in northern Vietnam*. *Marine Environmental Research* 71:225,233.
- Ferreira, J.G., J.H. Andersen, A. Borja, S.B. Bricker, J. Camp, M. Cardoso da Silva, E. Garcés, A.-S. Heiskanen, C. Humborg, L. Ignatiades, C. Lancelot, A. Menesguen, P. Tett, N. Hoepffner, and U. Claussen. 2011. *Overview of eutrophication indicators to assess environmental status within the European Marine Strategy Framework Directive*. *Estuarine, Coastal and Shelf Science* 93:117–131.
- Foley, J.A., N. Ramankutty, K.A. Brauman, E.S. Cassidy, J.S. Gerber, M. Johnston, N.D. Mueller, C. O'Connell, D.K. Ray, P.C. West, C. Balzer, E.M. Bennett, S.R. Carpenter, J. Hill, C. Monfreda, S. Polasky, J. Rockström, J. Sheehan, S. Siebert, D. Tilman, and D.P.M. Zaks. 2011. *Solutions for a cultivated planet*. *Nature* 478:337–342.
- Folke, C., Å. Jansson, J. Rockström, P. Olsson, S.R. Carpenter, F.S. Chapin, A.-S. Crépin, G. Daily, K. Danell, J. Ebbesson, T. Elmqvist, V. Galaz, F. Moberg, M. Nilsson, H. Österblom, E. Ostrom, Å. Persson, G. Peterson, S. Polasky, W. Steffen, B. Walker, and F. Westley. 2011. *Reconnecting to the Biosphere*. *Ambio* 40:719–738.
- Galaz, V., F. Moberg, E.-K. Olsson, E. Paglia, and C. Parker. 2011. *Institutional and political leadership dimensions of cascading ecological crises*. *Public Administration* 89:361–380.
- Hahn, T. 2011. *Self-organized governance networks for ecosystem management: who is accountable?* *Ecology and Society* 16(2):18.
- Jilbert, T., C.P. Slomp, B.G. Gustafsson, and W. Boer. 2011. *Beyond the Fe-P-redox connection: preferential regeneration of phosphorus from organic matter as a key control on Baltic Sea nutrient cycles*. *Biogeosciences* 8:1699–1720.
- Kenward, R.E., M.J. Whittingham, S. Arampatzis, B.D. Manos, T. Hahn, A. Terry, R. Simoncini, J. Alcorn, O. Bastian, M. Donlan, K. Elowe, F. Franzén, Z. Karacsonyi, M. Larsson, D. Manou, I. Navodaru, O. Papadopoulou, J. Papatthaniou, A. von Raggamby, R.J.A. Sharp, T. Söderqvist, Å. Soutukorva, L. Vavrova, N. J. Aebischer, N. Leader-Williams, and C. Rutz. 2011. *Identifying governance strategies that effectively support ecosystem services, resource sustainability, and biodiversity*. *Proceedings of the National Academy of Sciences, USA (PNAS)* 108:5308–5312.
- Keys, P.W., R.J. van der Ent, L.J. Gordon, H. Hoff, R. Nikoli, and H.H.G. Savenije. 2011. *Analyzing precipitation sheds to understand the vulnerability of rainfall dependent regions*. *Biogeosciences Discuss* 8:10487–10516.

Kreutzwiser, R., R. de Loë, K. Imgrund, M.J. Conboy, H. Simpson, and R. Plummer. 2011. *Understanding stewardship behavior: factors facilitating and constraining private water well stewardship*. Journal of Environmental Management 92:1104–1114.

Lansing, J.S., and M.P. Cox. 2011. *The domain of the replicators: cultural evolution and the neutral theory*. Current Anthropology 52:105–125.

Lansing, J.S., M.P. Cox, T.A. de Vet, S.S. Downey, B. Hallmark, and H. Sudoyo. 2011. *An ongoing Austronesian expansion in Island Southeast Asia*. Journal of Anthropological Archaeology 30: 262–272.

Lansing, J.S., and K.M. Fox. 2011. *Niche construction on Bali: the gods of the countryside*. Philosophical Transactions of the Royal Society B 366:927–934.

Lansing, J.S., and J.N. Kremer. 2011. *Rice, fish and the planet*. Proceedings of the National Academy of Sciences, USA (PNAS) 108:19841–19842.

Lundholm, C., and L. Sternäng. 2011. *Climate change and morality: students' perspectives on the individual and society*. International Journal of Science Education 33:1131–1148.

Lundholm, C. 2011. *Society's response to environmental challenges: citizenship and the role of knowledge*. In Factis Pax 5:80–96.

Mård Karlsson, J. A, Bring, G.D. Peterson, L.J. Gordon, and G. Destouni. 2011. *Opportunities and limitations to detect climate-related regime shifts in inland Arctic ecosystems through eco-hydrological monitoring*. Environmental Research Letters 6:e014015.

Matti, S., and A. Sandström. 2011. *The rationale determining advocacy coalitions: examining coordination networks and corresponding beliefs*. Policy Studies Journal 39:385–410.

May, B., and R. Plummer. 2011. *Accommodating the challenges of climate change adaptation and governance in conventional risk management: adaptive collaborative risk management (ACRM)*. Ecology and Society, 16(1): 47.

McDonald, R.I., I. Douglas, C. Revenga, R. Hale, N. Grimm, J. Gronwall, and B. Fekete. 2011. *Global urban growth and the geography of water availability, quality, and delivery*. Ambio 40:437–446.

Möllmann, C., T. Blenckner, M. Casini, A. Gårdmark, an M. Lindegren. 2011. *Beauty is in the eye of the beholder: management of Baltic cod stock requires an ecosystem approach*. Marine Ecology Progress Series 431:293–297.

Müller-Karulis, B., and J. Aigars. 2011. *Modeling the long-term dynamics of nutrients and phytoplankton in the Gulf of Riga*. Journal of Marine Systems 87:161–176.

Naddafi, R., T. Blenckner, P. Eklöv, and K. Pettersson. 2011. *Physical and chemical properties determine zebra mussel invasion success in lakes*. Hydrobiologia 669:227–236.

Österblom, H., A. Constable, and S. Fukumi. 2011. *Illegal fishing and the organized crime analogy* Trends in Ecology & Evolution 26:261–262.

Österblom, H., M. Sissenwine, D. Symes, M. Kadin, T. Daw, and C. Folke. 2011. *Incentives, social–ecological feedbacks and European fisheries*. Marine Policy 35:568–574.

Österblom, H., and U.R. Sumaila. 2011. *Toothfish crises, actor diversity and the emergence of compliance mechanisms in the Southern Ocean*. Global Environmental Change 21:972–982.

Pelletier, N., E. Audsley, S. Brodt, T. Garnet, P. Henriksson, A. Kendall, K. Kramer, D. Murphy, T. Nemecek, and M. Troell. 2011. *Energy intensity of agriculture and food systems*. Annual Review of Environment and Resources 36:223–246.

Perrings, C., S. Naeem, F.S. Ahrestani, D.E. Bunker, P. Burkill, G. Canziani, T. Elmqvist, J.A. Fuhrman, F.M. Jaksic, Z. Kawabata, A. Kinzig, G.M. Mace, H. Mooney, A.-H. Prieur-Richard, J. Tschirhart, and W. Weisser. 2011. *Ecosystem services, targets, and indicators for the conservation and sustainable use of biodiversity*. Frontiers in Ecology and the Environment 9:512–520.

Pierson, D.C., G.A. Weyhenmeyer, L. Arvola, B. Benson, T. Blenckner, T. Kratz, D.M. Livingstone, H. Markensten, G. Marzec, K. Pettersson, and K. Weathers. 2011. *An automated method to monitor lake ice phenology* Limnology & Oceanography:Methods 9:74–83.



Word cloud of most common words use in publication abstracts.

- Plummer, R., D. de Grosbois, R. de Loë, and J. Velaniškis. 2011. *Probing the integration of land use and watershed planning in a shifting governance regime*. Water Resources Research 47:W09502.
- Polasky, S., S.R. Carpenter, C. Folke, and B. Keeler. 2011. *Decision-making under great uncertainty: environmental management in an era of global change*. Trends in Ecology and Evolution 26:398–404.
- Porter, J.R., L. Deutsch, D. Dumaresq, and R. Dyball. 2011. *How will growing cities eat?* Nature 469:34.
- Raudsepp-Hearne, C., G.D. Peterson, M. Tengö, and E.M. Bennett. 2011. *The paradox persists: how to resolve it?* BioScience 61:11–12.
- Raufflet, E. and M. Tengö. 2011. *The nature centre at Mont Saint-Hilaire: how far?* Case Research Journal 31:3.
- Reed, D.C., C.P. Slomp, and B.G. Gustafsson. 2011. *Sedimentary phosphorus dynamics and the evolution of bottom water hypoxia: a coupled benthic-pelagic model of a coastal system*. Limnology and Oceanography 56:1075–1092.
- Rodriguez, R.G., S. Villasante, and M. do Carme Garcia-Negro. 2011. *Are red tides affecting economically the commercialization of the Galician (NW Spain) mussel farming?* Marine Policy 35:252–257.
- Sandström, A. 2011. *Navigating a complex policy system: explaining local divergences in Swedish fish stocking policy*. Marine Policy 35:419–425.
- Schultz, L., A. Duit., and C. Folke. 2011. *Participation, adaptive co-management and management performance in the World Network of Biosphere Reserves*. World Development 39:662–671.
- Soomere, T., O. Andrejev, A. Sokolov, and E. Quak. 2011. *Management of coastal pollution by means of smart placement of human activities*. Journal of Coastal Research 57:951–955.
- Soomere, T., O. Andrejev, K. Myrberg, and A. Sokolov. 2011. *The use of Lagrangian trajectories for the identification of the environmentally safe fairways*. Marine Pollution Bulletin 62:1410–1420.
- Steffen, W., J. Grinevald, P. Crutzen, and J. McNeill. 2011. *The Anthropocene: conceptual and historical perspectives*. Philosophical Transactions of the Royal Society A 369:842–867.
- Steffen, W., Å. Persson, L. Deutsch, J. Zalasiewicz, M. Williams, K. Richardson, C. Crumley, P. Crutzen, C. Folke, L. Gordon, M. Molina, V. Ramanathan, J. Rockström, M. Scheffer, H.J. Schellnhuber, and U. Svedin. 2011. *The Anthropocene: from global change to planetary stewardship*. Ambio 40:739–761.
- Stein, C., H. Ernstson, and J. Barron. 2011. *A social network approach to analyzing water governance: the case of the Mkindo catchment, Tanzania*. Physics and Chemistry of the Earth 36:1085–1092.
- Steneck, R.S., T.P. Hughes, J.E. Cinner, W.N. Adger, S.N. Arnold, S.A. Boudreau, K. Brown, F. Berkes, C. Folke, L. Gunderson, P. Olsson, M. Scheffer, E. Stephenson, B. Walker, J. Wilson, and B. Worm. 2011. *Creation of a gilded trap by the high economic value of the Maine lobster fishery*. Conservation Biology 25:904–912.
- Sun, X, P. Andersson, C. Humborg, B. Gustafsson, D.J. Conley, P. Crill, and C.-M. Mörth. 2011. *Climate dependent diatom production is preserved in biogenic Si isotope signatures*. Biogeosciences 8:3491–3499.
- Sörlin., S. 2011. *The contemporaneity of environmental history: negotiating scholarship, useful history, and the new human condition*. Journal of Contemporary History 46:610–630.
- Thyresson, M. M. Nyström, and B. Crona. 2011. *Trading with resilience: parrotfish trade and the exploitation of key-ecosystem processes in coral reefs*. Coastal Management 39:396–411.
- Tuvendal, M., and T. Elmqvist. 2011. *Ecosystem services linking social and ecological systems: river brownification and the response of down-stream stakeholders*. Ecology and Society 16(4):21.
- van der Leeuw, S., R. Costanza, S. Aulenbach, S. Brewer, M. Burek, S. Cornell, C. Crumley, J.A. Dearing, C. Downy, L.J. Graumlich, S. Heckbert, M. Hegmon, K. Hibbard, S.T. Jackson, I. Kubiszewski, P. Sinclair, S. Sörlin, and W. Steffen. 2011. *Toward an integrated history to guide the future*. Ecology and Society 16(4):2.
- Voss, M., J.W. Dippner, C. Humborg, J. Hürdler, F. Korth, T. Neumann, G. Schernewski, and M. Venohr. 2011. *History and scenarios of future developments of Baltic Sea eutrophication*. Estuarine, Coastal and Shelf Science 92:307–322.
- Warren-Rhodes, K., A.-M. Schwarz, L. Boyle, L. Albert, S. Suti Agalo, R. Warren, A. Bana, C. Paul, R. Kodosiku, W. Bosma, D. Yee, P. Rönnbäck, B. Crona, and N. Duke. 2011. *Mangrove ecosystem services and the potential for carbon revenue programmes in Solomon Islands*. Environmental Conservation 38:485–496.
- Westley, F., P. Olsson, C. Folke, T. Homer-Dixon, H. Vredenburg, D. Loorbach, J. Thompson, M. Nilsson, E. Lambin, J. Sendzimir, B. Banarjee, V. Galaz, and S. van der Leeuw. 2011. *Tipping towards sustainability: emerging pathways of transformation*. Ambio 40:762–780.
- Wilkinson, C. 2011. *Strategic navigation: in search of an adaptable mode of strategic spatial planning practice*. Town Planning Review 82:595–613.
- York, A.M., A. Barnett, A. Wutich, and B.I. Crona. 2011. *Household bottled water consumption in Phnom Penh: a lifestyle choice*. Water International 36:708–718.

### Journal articles online 2011, official publication 2012

- Boonstra, W.J., and Pham Thi Hong Nhung. *The ghosts of fisheries management*. Journal of Natural Resources Policy Research doi:10.1080/19390459.2012.642634
- Cinner, J.E., T.R. McClanahan, N.A.J. Graham, T.M. Daw, J. Maina, S.M. Stead, A. Wamukota, K. Brown, and Ö. Bodin. *Vulnerability of coastal communities to impacts of climate change on reef fisheries*. Global Environmental Change <http://dx.doi.org/10.1016/j.gloenvcha.2011.09.018>
- Da, C.T., L.T. Hung, H. Berg, J.E. Lindberg, and T. Lundh. *Evaluation of potential feed sources, and technical and economic considerations of small-scale commercial striped catfish (*Pangasius hypophthalmus*) pond farming systems in the Mekong Delta of Vietnam* doi: 10.1111/j.1365-2109.2011.03048.x
- Daniel, T.C., A. Muhar, A. Arnberger, O. Aznar, J.W. Boyd, K.M.A. Chan, R. Costanza, T. Elmqvist, C.G. Flint, P.H. Gobster, A. Grêt-Regamey, R. Lave1, S. Muhar, M. Penker, R.G. Ribe1, T. Schuppenlehner, T. Sikor, I. Soloviy, M. Spierenburg, K. Taczanowska, J. Tam, and A. von der Dunk. *Cultural ecosystem services: potential contributions to the ecosystems services science and policy agenda*. Proceedings of the National Academy of Sciences, USA (PNAS)
- Davies, P., and C. Lundholm. *Students' understanding of socio-economic phenomena: conceptions about the free provision of goods and services*. Journal of Economic Psychology doi:10.1016/j.joep.2011.08.003.
- Eriksson, H., G. Robinson, M.J. Slater, and M. Troell. 2011. *Sea cucumber aquaculture in the Western Indian Ocean: challenges for sustainable livelihood and stock improvement*. Ambio doi:10.1007/s13280-011-0195-8
- Fidelman P., L. Evans, M. Fabinyi, S. Foale, J. Cinner, and F. Rosen. 2011. *Governing large-scale marine commons: contextual challenges in the Coral Triangle*. Marine Policy doi:10.1016/j.marpol.2011.03.007
- Garg, K.K., L. Karlberg, J. Barron, S.P.Wani, and J. Rockstrom. 2011. *Assessing impacts of agricultural water interventions in the Kothapally watershed, Southern India*. Hydrological Processes doi:10.1002/hyp.8138
- Galaz, V., B. Crona, H. Österblom, P. Olsson, and C. Folke. *Polycentric Systems and Interacting Polycentric systems and interacting planetary boundaries: emerging governance of climate change—ocean acidification—marine biodiversity*. Ecological Economics doi.org/10.1016/j.ecolecon.2011.11.012
- Howarth, R., D. Swaney, G. Billen, J. Garnier, B. Hong, C. Humborg, P. Johnes, C. –M. Mörtz, and R. Marino. *Nitrogen fluxes from the landscape are controlled by net anthropogenic nitrogen inputs and by climate*. Frontiers in Ecology and the Environment doi:10.1890/100178
- Meier, M., H.C. Andersson, K. Eilola, B. Gustafsson, I. Kuznetsov, B. Müller-Karulis, T. Neumann, and O.P. Savchuk. *Hypoxia in future climates: a model ensemble study for the Baltic Sea*. Geophysical Research Letters, doi:10.1029/2011GL049929.
- Norkko, J., D.C. Reed, K. Timmermann, A. Norkko, B.G. Gustafsson, E. Bonsdorff, C.P. Slomp, J. Carstensen, and D.J. Conley. *A welcome can of worms? Hypoxia mitigation by an invasive species*. Global Change Biology doi:10.1111/j.1365-2486.2011.02513.x
- Stange, K., P. Olsson, and H. Österblom. *Managing organizational change in an international scientific network: a study of ICES reform processes*. Marine Policy <http://dx.doi.org/10.1016/j.marpol.2011.10.013>
- Sternäng, L., and C. Lundholm. 2011. *Climate change and costs: investigating students' reasoning on nature and economic development*. Environmental Education Research doi:10.1080/13504622.2011.630532
- Wilkinson, C. *Social-ecological resilience: insights and issues for planning theory*. Planning Theory doi: 10.1177/1473095211426274
- Villasante, S., D. Rodriguez, M. Antelo, M. Quaas, and H. Österblom. *The global seafood market performance index: a theoretical proposal and potential empirical applications*. Marine Policy doi:10.1016/j.marpol.2011.04.007

### Book chapters

Alfsen, C., A. Duval, and T. Elmqvist. 2011. *The urban landscape as a social-ecological system for governance of ecosystem services*. In: Niemelä, J., H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James (eds.). Urban Ecology: Patterns, Processes, and Applications. Oxford University Press, Oxford. pp 213–218.

Angerbrandt, H., L. Lindström and M. de la Torre-Castro. 2011. *What is this thing called "community" good for?* In: Chuengpagdee, R. (ed.). Contemporary Visions for World Small-Scale Fisheries. Eburon, Delft. pp.353–365.

Barron, J, P. Keys. 2011. *Watershed management through a resilience lens*. In: Wani, S.P., J. Rockström, and K.L. Sahrawat (eds.). Integrated Watershed Management in Rainfed Agriculture. CRC Press. Boca Raton, FL.

Barthel, S., S. Sörlin, and J. Ljungkvist. 2011. *Innovative memory and resilient cities: echoes from ancient Constantinople*. In: Sinclair, P.J.J., G. Nordquist, F. Herschend, and C. Isendahl (eds.). The Urban Mind: Cultural and Environmental Dynamics. Department of Archaeology and Ancient History, Uppsala University, Uppsala. pp 391–405.

- Bodin, Ö., and B.I. Crona. 2011. *Friends or neighbors? subgroup heterogeneity and the importance of bonding and bridging ties in natural resource governance*. In: Bodin, Ö., C. Prell (eds.). *Social Networks in Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK.
- Bodin, Ö., S. Ramirez-Sanchez, H. Ernstson, and C. Prell. 2011. *Introduction – a social relational approach to natural resource governance*. In: Bodin, Ö., and C. Prell (eds.). *Social Networks and Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK.
- Bodin, Ö., and C. Prell. 2011. *Social network analysis in natural resource governance: summary and outlook*. In: Bodin, Ö., and C. Prell (eds.). *Social Networks and Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK.
- Boyd, E., and C. Folke. 2011. *Adapting institutions, adaptive governance and complexity: an introduction*. In: Boyd, E., and C. Folke (eds.). *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience*. Cambridge University Press, Cambridge, UK. pp 1–8.
- Boyd, E., and C. Folke. 2011. *Conclusions: adapting institutions and resilience*. In: Boyd, E., and C. Folke (eds.). *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience*. Cambridge University Press, Cambridge, UK. pp 264–280.
- Casini, M., C. Möllmann, and H. Österblom. 2011. *Food-web and climate-related dynamics in the Baltic Sea: present and potential future applications in fish stock assessment and management*. In: Belgrano, A., and C.W. Folwer (eds.). *Ecosystem Based Management for Marine Fisheries: An Evolving Perspective*. Cambridge University Press, Cambridge, UK.
- Colding, J. 2011. *The role of ecosystem services in contemporary urban planning*. In: Niemelä, J., H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James (eds.). *Urban Ecology: Patterns, Processes and Applications*. Oxford University Press, Oxford, UK. pp 228–237.
- Colding, J. 2011. *Creating incentives for increased public engagement in ecosystem management through urban commons*. In: Boyd, E., and C. Folke (Eds.). *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience*. Cambridge University Press, Cambridge, UK. pp 101–124.
- Crépin, A.-S. 2011. *Askö 1997: Comment*. In: Söderqvist, T., A. Sundbaum, C. Folke, and K.-G. Mäler (eds.). *Bringing Ecologists and Economists Together: The Askö Meetings and Papers*. Springer Verlag, Heidelberg.
- Crona, B.I., and Ö. Bodin. 2011. *Knowledge, social networks, and leadership: setting the stage for the development of adaptive institutions?* In: Boyd, E., and C. Folke (eds.). *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience*. Cambridge University Press, Cambridge, UK. pp 11–36.
- Crona, B.I., and Ö. Bodin. 2011. *Barriers in transforming to sustainable governance: the role of key individuals*. In: Bodin, Ö., C. Prell (eds.). *Social Networks in Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK.
- Crona, B.I., C. Prell, H. Ernstson, M. Reed, and K. Hubacek. 2011. *Network-related approaches and theories in resource management*. In: Bodin, Ö., C. Prell (eds.). *Social Networks in Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK.
- Crumley, C.L. 2011. *Preface*. In: Sinclair, P.J.J., G. Nordquist, F. Herschend, and C. Isendahl (eds.). *The Urban Mind: Cultural and Environmental Dynamics*. Department of Archaeology and Ancient History, Uppsala University, Uppsala.
- Deutsch, L., M. Troell, K. Limburg, and M. Huitric. 2011. *Global trade of fisheries products: implications for marine ecosystems and their services*. In: Köllner, T. (ed.). *Ecosystem Services and Global Trade of Natural Resources: Ecology, Economics and Policies*. Routledge, London, UK. pp 120–147.
- Elmqvist, T. 2011. *Introduction ecosystem services, and social systems in urban landscapes*. In: Niemelä, J., H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James (eds.). *Urban Ecology: Patterns, Processes and Applications*. Oxford University Press, Oxford, UK. pp 189–192.
- Ernstson, H. 2011. *Transformative collective action: a network approach to transformative change in ecosystem-based management*. In: Bodin, Ö., C. Prell (eds.). *Social Networks in Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK.
- Folke, C. *The Askö challenge*. In: Sundbaum, A., T. Söderqvist, C. Folke, and K.-G. Mäler (eds.). *Bringing Ecologists and Economists Together: The Askö Meetings and Papers*. Springer Verlag, Heidelberg, Germany, pp 231–234.
- Folke, C. 2011. *Learning and adapting: central features of resilience*. In: Krasny, M.E., C. Lundholm, and R. Plummer (eds.). *Resilience in Social-Ecological Systems: The Role of Learning and Education*. Routledge, London, UK.

- Folke, C. 2011. *Foreword*. In: Bodin, Ö., C. Prell (eds.). *Social Networks in Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK.
- Galaz, V. 2011. *Double complexity: information technology and reconfigurations in adaptive governance*. In: Boyd, E., and C. Folke (eds.). *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience*. Cambridge University Press, Cambridge, UK. pp 193–215.
- Lansing, J.S., and S.S. Downey. 2011. *Anthropology and complexity*. In: Hooker, C. (ed.). *Philosophy of Complex Systems*, Vol. 10 of *Handbook of the Philosophy of Science*. North Holland, Elsevier, Amsterdam. pp 569–601.
- Ljungkvist, J., S. Barthel, G. Finnveden, and S. Sörlin. 2011. *The urban anthropocene: lessons for sustainability from the environmental history of Constantinople*. In: Sinclair, P.J.J., G. Nordquist, F. Herschend, and C. Isendahl (eds.). *The Urban Mind: Cultural and Environmental Dynamics*. Department of Archaeology and Ancient History, Uppsala University, Uppsala. pp 367–390.
- Meyer, W.J., and C.L. Crumley. 2011. *Historical ecology: using what works to cross the divide*. In: Moore, T., and L. Armada (eds.). *Atlantic Europe in the First Millennium BC: Crossing the Divide*. Oxford University Press, Oxford.
- Niemelä, J., J.H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James. 2011. *Concluding remarks: the way forward for urban ecology*. In: Niemelä, J., J.H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James (eds.). *Urban Ecology: Patterns, Processes and Applications*. Oxford University Press, Oxford, UK.
- Niemelä, J., J.H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James. 2011. *Introduction*. In: Niemelä, J., J.H. Breuste, G. Guntenspergen, N.E. McIntyre, T. Elmqvist, and P. James (eds.). *Urban Ecology: Patterns, Processes and Applications*. Oxford University Press, Oxford, UK. pp 319–322
- Rockström, J., L. Karlberg, and M. Falkenmark. 2011. *Global food production in a water-constrained world: exploring 'green' and 'blue' challenges and solutions*. In: Grafton, R.Q., and K. Hussey (eds.). *Water Resources Planning and Management*. Cambridge University Press, Cambridge, UK. pp 131–151.
- Rockström, J., and M. Schultz. 2011. *Contributing to resilience*. In: Djoghla, A., and F. Dodds (eds.). *Biodiversity and Ecosystem Insecurity: A Planet in Peril*. Earthscan, London.
- Sandström, A. 2011. *Social networks, joint image building, and adaptability: the case of local fishery management*. In: Bodin, Ö., C. Prell (eds.). *Social Networks in Natural Resource Management: Uncovering the Social Fabric of Environmental Governance*. Cambridge University Press, Cambridge, UK. pp 288–321.
- Sörlin., S. 2011. *Exiting the environmental trap: knowledge regimes and the third phase of environmental policy*. In: S. Helgesson (ed.). *Exit: Endings and New Beginnings in Literature and Life*. Rodopi, Amsterdam & New York, NY. pp 237–262.
- Sörlin., S. 2011. *The anxieties of a science diplomat: field co-production of climate knowledge and the rise and fall of Hans Ahlmann's 'polar warming'*. In: Fleming, J.R., and V. Jankovich (eds.). *Osiris 26: Revisiting Klima*. University of Chicago Press, Chicago, IL. pp 66–88.
- Sörlin., S. 2011. *Polar societies and social processes* [contributing author; lead author Igor Krupnik & Grete K. Hovelsrud]. In: Krupnik, I. et al. (eds.). *Understanding Earth's Polar Challenges: International Polar Year 2007–2008*. University of the Arctic, Rovaniemi, Finland/CCI Press (printed version), & ICSU/WMO Joint Committee for International Polar Year 2007–2008, Edmonton, Alberta, Canada. pp 311–334.
- Tengö, M., and J. von Heland. 2011. *Adaptive capacity of local indigenous institutions: the case of the taboo forests of southern Madagascar*. In: Boyd, E., and C. Folke (eds.). *Adapting Institutions: Governance, Complexity and Social-Ecological Resilience*. Cambridge University Press, Cambridge, UK. pp 37–74.

### Other scientific publications

Blenckner, T., T. Noges, L. Tranvik, et al. 2011. *Preface*. *Hydrobiologia* 660:1–2.

Boonstra, W.J. 2011. *Farwell to growth*. Serge Latouche. Book Review. *Growth and Change* 42:670–674.

Crépin, A.-S., B. Walker, S. Polasky, W. Steffen, V. Galaz, C. Folke, and J. Rockström. 2011. *Global Dynamics, Multiple shocks, and Resilience: Planetary stewardship and catastrophic shifts in the Earth system*. *Beijer Discussion Papers* 228.

Deutsch, L. M. Lannerstad, and Y. Ran. 2011. *Responsible environmental choices for a sustainable "Livestock Revolution"*. Background paper for The Stockholm Dialogue on Global Sustainability– Seizing Planetary Opportunities. The Royal Dramatic Theatre in Stockholm on Thursday, 19 May 2011.

Folke, C., and J. Rockström. 2011. *Editorial – 3rd Nobel Laureate Symposium on Global Sustainability: Transforming the World in an Era of Global Change*. *Ambio* 40:717–718.

Folke, C., Å. Jansson, J. Rockström, P. Olsson, S. Carpenter, A-S. Crepin, G. Daily, J. Ebbesson, T. Elmqvist, V. Galaz, F. Moberg, M. Nilsson, H. Österblom, E. Ostrom, Å. Persson, S. Polasky, W. Steffen, B. Walker and F. Westley. 2011. *Reconnecting to*

- the Biosphere, Working Paper No.1. Prepared for the "3rd Nobel Laureate Symposium on Global Sustainability: Transforming the World in an Era of Global Change", in Stockholm, 16–19 May 2011.* Stockholm Resilience Centre, the Royal Swedish Academy of Sciences, the Stockholm Environment Institute, the Beijer Institute of Ecological Economics and the Potsdam Institute for Climate Impact Research
- Gerger Swartling, Å., C. Lundholm, R. Plummer, D. Armitage (2011). *Social Learning and Sustainability: Exploring Critical Issues in Relation to Environmental Change and Governance. Workshop proceedings, Stockholm Resilience Centre, Stockholm, Sweden 1–2 June 2010.* SEI Project Report. Online <http://sei-international.org/mediamanager/documents/Publications/SEI-ProjectReport-Swartling-SocialLearningAndSustainability.pdf>
- Gunderson, L., and C. Folke. *Editorial – Tricky Times.* Ecology and Society 16(4): 31.
- Gunderson, L.H., and C. Folke. 2011. *Editorial – Resilience 2011: leading transformational change.* Ecology and Society 16(2):30.
- Gustafsson, B.G., and M. Rodriguez Medina. 2011. *Validation data set compiled from Baltic Environmental Database – Version 2* (January 26, 2011). Baltic Nest Institute Technical Report No. 2
- Klockner Larsen, R., Gerger Swartling, Å., Powell, N., Simonsson, L, Osbeck, M. 2011) *A Framework for Dialogue Between Local Climate Adaptation Professionals and Policy Makers.* SEI Research Report, Stockholm Online <http://www.sei-international.org/mediamanager/documents/Publications/SEI-ResearchReport-Larsen-AFrameworkForDialogueBetweenLocalClimateAdaptationProfessionalsAndPolicyMakers-2011.pdf>
- Lannerstad, M. (ed.). 2011. *New Thinking on Global Water Security: Towards an Ecohydrological Perspective: A Malin Falkenmark Reader.* Stockholm Environment Institute/Stockholm Resilience Centre.
- Marcus, L., and J. Colding. 2011. *Towards a spatial morphology of urban social-ecological systems.* Conference proceedings for the 18th International conference on urban form, ISUF2011, August 26–29 2011, Concordia University, Montreal.
- Meier, H.E.M., H. Andersson, C. Dieterich, K. Eilola, B. Gustafsson, A. Höglund, R. Hordoir, and S. Schimanke. 2011. *Transient scenario simulations for the Baltic Sea Region during the 21st century.* SMHI Report, Series Oceanography, no 108, 81pp.
- Persson, Å. 2011. *Institutionalising climate adaptation finance under the UNFCCC and beyond: Could an adaptation 'market' emerge?* SEI Working Paper No. 2011–03
- Persson, Å. 2011. Review of A. Gorla, A. Sgobbi and I. von Homeyer (eds.) (2010) *Governance for the Environment: A Comparative Analysis of Environmental Policy Integration.* Cheltenham: Edward Elgar. Environment and Planning C: Government and Policy 29:568–569.
- Persson, Å., and J. Rockström. 2011. *Commentary: Business leaders.* Commentary, Nature Climate Change, doi: 10.1038/nclimate1290
- Powell, N., Å. Gerger Swartling, M.H. Hoang (eds.). 2011. *Stakeholder Agency and Rural Development Policy: Articulating Co-Governance in Vietnam.* World Agroforestry Centre (ICRAF) Hanoi, Vietnam.
- Powell, N., Å. Gerger Swartling, and M.H. Hoang. 2011. *Rural development in Vietnam.* In: Powell, N., Å. Gerger Swartling, and M.H. Hoang (eds.). Stakeholder Agency and Rural Development Policy: Articulating Co-Governance in Vietnam. World Agroforestry Centre (ICRAF) Hanoi, Vietnam. pp 3–16.
- Powell, N., Å. Gerger Swartling, and M.H. Hoang. 2011. *Co-governance: putting participation into practice.* In: N. Powell, Å. Gerger Swartling and M.H. Hoang (eds.) Stakeholder Agency and Rural Development Policy: Articulating Co-Governance in Vietnam. World Agroforestry Centre (ICRAF) Hanoi, Vietnam. pp 141–150.
- Rockström, J., and C. Folke. 2011. *Introduction.* In: Lannerstad, M. (ed.). *New Thinking on Global Water Security: Towards an Ecohydrological Perspective: A Malin Falkenmark Reader.* Stockholm Environment Institute/Stockholm Resilience Centre.
- Sörlin, S. 2011. *Review of: Nature's Ghosts: Confronting Extinction from the Age of Jefferson to the Age of Ecology* (Chicago, IL and London, University of Chicago Press, 2009). Journal of Historical Geography 37:4.
- Steffen, W., Å. Persson, L. Deutsch, M. Williams, J. Zalasiewicz, C. Folke, J. Rockström, C. Crumley, P. Crutzen, L. Gordon, M. Molina, V. Ramanathan, K. Richardson, M. Scheffer, J. Schellnhuber, and U. Svedin. 2011. *The Anthropocene: from global change to planetary stewardship, Working Paper No. 2.* Prepared for the "3rd Nobel Laureate Symposium on Global Sustainability: Transforming the World in an Era of Global Change", in Stockholm, 16–19 May 2011. Stockholm Resilience Centre, the Royal Swedish Academy of Sciences, the Stockholm Environment Institute, the Beijer Institute of Ecological Economics and the Potsdam Institute for Climate Impact Research.
- Steffen, W., J. Rockström and R. Costanza (2011). *How defining planetary boundaries can transform our approach to growth.* Solutions, 2(3)
- Stein, C., J. Barron, and H. Ernstson. 2011. *A social network approach to analyze multi-stakeholders governance arrangement in water resources management: Three case studies from catchments in Burkina Faso, Tanzania and Zambia.* Proceedings of the XIVth World Water Congress, 25–29 September, at Porto de Galinhas, Pernambuco, Brazil.

Troell, M., T. Chopin, G., Reid, S. Robinson, and G. Sara. 2011. *Letter to the Editor*. *Aquaculture* 313:171–172.

Troell, M., T. Hecht, M. Beveridge, S. Stead, I. Bryceson, N. Kautsky, F. Ollevier, and A. Mmochi. 2011. *Mariculture in the WIO region – Challenges and Prospects*. WIOMSA Book Series No. 11. viii+ 59 pp.

Westley, F., P. Olsson, C. Folke, T. Homer-Dixon, H. Vredenburg, D. Loorbach, J. Thompson, M. Nilsson, E. Lambin, J. Sendzimir, B. Banarjee, V. Galaz, S van der Leeuw. 2011. *Tipping towards sustainability: emergent pathways of transformation, Working Paper No. 3*. Prepared for the “3rd Nobel Laureate Symposium on Global Sustainability: Transforming the World in an Era of Global Change”, in Stockholm, 16–19 May 2011. Stockholm Resilience Centre, the Royal Swedish Academy of Sciences, the Stockholm Environment Institute, the Beijer Institute of Ecological Economics and the Potsdam Institute for Climate Impact Research.

### Policy reports

*The Durban Vision Statement: global sustainability in a changing climate*. 6 December 2011. The 17th Conference of the Parties (COP17) to the United Nations Framework Convention on Climate Change (UNFCCC).

*FishSTERN A first attempt at an ecological-economic evaluation of fishery management scenarios in the Baltic Sea region*, In: Swedish Environmental Protection Agency Report Series \*Report 6428 • April 2011, ISBN 978-91-620-6428-0 ISSN 0282-7298

Gerger Swartling, Å., K. André, K. Blennow, L. Bärring, A. Jönsson, F. Lagergren, A. Lilja, B. Smith. *The science – stakeholder interface in Mistra-SWECIA: Experiences from the Swedish forestry sector*. Mistra-SWECIA Annual Report, pp. 6–9.

Gerger Swartling, Å., Lead Author of Global Environmental Outlook 5 report, *Policies for Europe*, section Climate Change, UNEP, Nairobi.

Nilsson, A.E., and M. Olsson. 2011. *Arctic Resilience Report*. Scoping Workshop, Royal Swedish Academy of Sciences Sept. 26–28. Stockholm Environment Institute and Stockholm Resilience Centre. Online <http://www.stockholmresilience.su.se/download/18.3foadc2c1344ec370d38000942/Arctic+Resilience+Report+Scoping+Workshop.pdf>

Schultz, L., R. Plummer, and S. Purdy. 2011. *Applying a social-ecological inventory: A workbook for finding key actors and engaging them*. Brock University, St. Catherine, Canada.

Svedin, U. 2011. *Urban Development and the Environmental Challenges ‘green’ systems considerations*. European Commission, DG Regio, 2011. Thematic issue paper to the project “Cities of tomorrow – challenges, visions, ways forward”. Online [http://ec.europa.eu/regional\\_policy/conferences/citiesoftomorrow/index\\_en.cfm](http://ec.europa.eu/regional_policy/conferences/citiesoftomorrow/index_en.cfm) with reference to “urban environmental challenges” The Stockholm Memorandum: Tipping the Scales towards Sustainability. 18 May 2011. 3rd Nobel Laureate Symposium on Global Sustainability, Stockholm, Sweden.

van Jaarsveld, A.S., K. Takeuchi, A. Dupraiappah, H. Mooney, E. Brondizio, T. Elmqvist, J. Gupta, P. Leadley, H. Nagendra, C. Padoch, H. Pereira, C. Perrings, B. Reyers, R. Scholes, M. Spirenborg, T. Yahara et al. 2011. *International Science Workshop on Assessments for IPBES*. United Nations University, Tokyo, Japan, 25–29 July, 2011. Workshop Report 16 August, 2011.

WIOMSA (2011). *Migrant fishers and fishing in the Western Indian Ocean: Socio-economic dynamics and implications for management*. Final Report of Commissioned Research Project MASMA/CR/2008/02.

### Other publications

Barthel, S., Marcus, L., Colding, J., Erixon, H., Grahn, S., Thorsvall, J., Kärsten, Carl. *Chans att sätta Stockholm på kartan*. SvD/040211

Colding, J. 2011. Svenska Dagbladet Brännpunkt, Stockholm, February 2011

Colding, J. 2011. *Ekosystem sliter i städer*. Formas Tidning Miljöforskning Nr 9, September 2011.

Galaz, V. (2011). *Ingenjörerna som försöker rädda Jorden*, Svenska Dagbladet (Under Strecket), 2011-05-19.

Galaz, V. (2011). *En smittsam smältdegel*, Internationella Studier, 1: 34–35.

Hahn, T. 13.04.11. *An agroecological paradigm shift in agricultural development*. <http://rs.resalliance.org/2011/04/13/an-agroecological-paradigm-shift-in-agricultural-development/>

Rockström, J., *År 2010 kan bli hetast i historien*, Expressen, 05/01/11

Rockström, J., Nilsson, M., Klein, R., Siebert, C., Schipper, L., Kjellén, B. 2011 *blir ett viktigt år för en hållbar global framtid*. DN, 21/01/11

Rockström, J., Wijkman, A. *Jordens resurser nära att ta slut*, SvD, 21/03/11

Rockström, J., Carlgren, A., Carlgren, G., Normark, S. *Sverige kan bidra till ny vision för en hållbar värld*, Dagens Nyheter, 14/05/11

Rockström, J., Carlgren, A., Steiner, A., Kuylenstierna, J. *Ett snabbspår till bättre klimat och skördar*, Dagens Nyheter, 16/06/11

Rosen, F. *Vårt öde och havens är ett*. Havsutsikt nr 3/2011.

Troell, M., G. Engström, Å. Jansson, and A.-S. Crépin. *Klimathotet består*. Uppsala Nya Tidning (Debatt). 5/10 2011.

Wijkman, A., and J. Rockström. 2011. *Den Stora Förnekelsen*. Medströms Bokförlag, Stockholm.

Österblom, H. 2011. *Havets superhjältar*. Framtider

### PhD theses

Borgström, S. 2011. *Urban shades of green. Current patterns and future prospects of nature conservation in urban landscapes*. Doctoral thesis. Dept of Systems Ecology, Stockholm University, Stockholm.

von Heland, J. 2011. *Rowing social-ecological systems: morals, culture and resilience*. Doctoral thesis. Stockholm: Department of Systems Ecology, Stockholm University.

### Master theses

#### Ecosystems, Governance and Globalisation programme

##### Quentin Dilasser

*Is gear-based management of herbivorous fish a viable tool to prevent or reverse phase shifts in coral reefs?: Linking resilience theory to practice*

##### Fredrik Granath

*Strategies for pollination services as a productive input in Canola production*

##### Emmeline Laszlo Ambjörnsson

*Power relations and adaptive capacity: Exploring gender relations in climate change adaptation and coping within small-scale farming in western Kenya*

##### Andrew Merrie

*An idea whose time has come: an innovation perspective on Marine Spatial Planning*

##### Daniel Meyer

*Transitions and resilience in the frozen commons: linking aquaculture, krill fishery, governance and ecosystem change in the Scotia Sea, Southern Ocean*

##### Rolands Sadauskis

*Building resilience to climate-driven regime shifts*

##### Hanna Sterve

*Factors restricting adoption of sustainable agricultural practices in a smallholder agro-ecosystem: A case study of Potshini community, upper Thukela region, South Africa*

##### Johan Sundqvist

*Of Tree Planting, Salvation and Urbanization: The Role of Evangelical Movements in Adaptive Capacity. Kigali, Rwanda*

##### Josefina Oddsberg

*An analysis of the potential of local stewardship as a management mode for increasing and enhancing ecosystem services in the urban landscape: Three case studies in Stockholm Municipality – Igelbäcken Allotment Garden, Akalla Allotment Garde and the Vinterviken Garden*

#### Sustainable Enterprising programme

##### Pernilla Hampus

*Corporate responsiveness to drivers of change: Using scenarios to improve decision making on sustainable management of complex dynamic ecosystems*

##### Caroline Gunterberg

*Fashion sourcing in China is changing: Energy perspectives on sustainable sourcing in China*

##### Christopher Hill

*Exploring the 'Unknown Unknowns' of Urban Farming: An ethnographic case study, in narrative form, on the last urban farm in Stockholm, Sweden*

##### Lina Häckner

*Sustainable Indicators: A case study of stakeholder perceptions and expectations on environmental sustainability reporting at Riksbyggen, a Swedish cooperative real estate company*

##### Olivier Pessot

*Small Businesses and how they connect to the Sustainable City: A list of actions for the transformation to a sustainable Paris*

##### Fei Tong

*Changing Corporate Social Responsibility (CSR) in China: A Case Study of Svenska Kullagerfabriken (SKF) in China*

##### Nicolas Castagno

*The development of a Natural Resource Management Policy: a discourse analysis on soybean farming during Uruguay's agricultural regime shift (2000–2010)*

# Research and other activities 2011

In 2011, SRC researchers have participated as speakers in well over 100 academic seminars, conferences and workshops, with several keynotes and invited presentations. These include:

AAAS, American Association for the Advancement of Science, Washington DC

Annual conference of the European Association of Environmental and Resource Economists, Rome

Arctic Frontiers Conference on Arctic Tipping points, Tromsø

7th International Congress of Arctic Social Science, Assessing Arctic Futures: voices, resources and governance

The Arctic and the EU: Environmental and Human Challenges, Stockholm

ASLO, American Society of Limnology and Oceanography

3rd international forum for the CGIAR Challenge Program on Water and Food (IFWF3), Pretoria

Global Food Security: Biophysical and Social Limits and Opportunities, Stockholm

2011 Colorado Conference on Earth System Governance, Fort Collins

14th European Association for Research on Learning and Instruction Conference, Exeter University,

Landscape Ecology World Congress, Beijing

Nordic Environmental Social Science Conference (NESS), Stockholm

Resilience 2011 conference, Tempe, Arizona

Resilience, water and foresight, Montpellier

SARAS meeting on small-scale fisheries in Latin America, Montevideo

Social-Ecological Inventories: Building Resilience to Environmental Change within Biosphere Reserves, Brock University, St Catharines, Ontario

2<sup>nd</sup> International Conference on Sustainability Transitions, Lund

WCRP Open Science Conference, Earth System research for global sustainability, Denver

*SRC staff members have also participated in a large amount of policy, practice and popular science events and presentations ranging from high-level political and UN meetings, conventions and processes to collaboration with regional and local organizations and stakeholders. There are also frequent requests from Swedish and international media for centre researchers to provide expert input.*

*SRC researchers have contributed to various evaluation committees and served as referees and advisors to several editorial boards of scientific journals. They have also been scientific advisors and members of boards and committees of research institutes and international research programmes. Centre researchers have also been advisors to UN bodies and related processes, Swedish ministers and ministries, as well as a variety of governmental and nongovernmental organizations from global to local level.*

## Stockholm Workshops – Frontiers in social-ecological research

**24–25 January:**

Agriculture and the Planetary Boundaries

**30 March:**

Programme on Ecosystem change and Society (PECS), scientific committee meeting, 26–27 January. Coastal social-ecological feedbacks

**11 April and 2 May:**

Baltic Nest/Baltic Stern scenario workshops

**12 April, 13 June, 13 October and 22 December:**

Social-ecological factors determining compliance

**22–24 August:**

Emergence of marine ecosystem stewardship

**17–19 September:**

Food security and aquaculture in a globalized world – links and tradeoffs between marine and terrestrial production systems - the Askö meeting 2011, the Beijer Institute of Ecological Economics

**20–21 September:**

Global dynamics and social-ecological resilience in the face of multiple shocks, in cooperation with the Beijer Institute of Ecological Economics

**26 September:**

Arctic Resilience Report Scoping Workshop

**10 October and 7–8 November:**

Global governance of marine resources

**10–11 November:**

Frontiers in adaptive governance

**18 November:**

Social-ecological scenarios for marine systems

**7 December:**

ECOSUPPORT/RECCA stakeholder workshop

*The Stockholm workshops are held in Stockholm and organised by the Stockholm Resilience Centre and partners.*

# Centre staff

## Centre Management

**Johan Rockström** Executive director

**Carl Folke** Science director

**Olof Olsson** Deputy director

**Christina Schaffer** Assistant director

## Administration

**Emina Muratshahic** Head of administration

**Kristina Hagqvist** Head of administration

**Denise Kreppenhof** Human resources administrator

**Cecilia Linder** Human resources

**Karolina Krzyzanowska** Financial controller

**Stina Nieminen** Project controller

**Therese La Monde** Office & financial administrator

**Johan Ahlenius** Financial & education administrator

**Thomas Bergendorff** Project assistant

**Maria Schewenius** Project coordinator

**Maja Brisvall** Strategic advisor

**Bengt Hall** IT support

**Gunnar Jacobsson** IT Support

## Practice, Policy and Communication

**Ellika Hermansson Török** Head of communications

**Anna Emmelin** Communication strategist

**Cajsa Martinsson** Communication officer

**Fredrik Moberg** Communication strategist (Futura foundation)

**Sturle Hauge Simonsen** Web and publications editor

**Marmar Nekoro** Communication and policy officer for BalticSTERN and BNI

**Mattias Klum** Affiliated senior advisor

**Jeff Ranara** Department service (UNESCO/MAB)

**Magnus Tuvendal** Department service (SRC seminars)

## Modelling and visualisation lab

**Emma Sundström** Programmer

**Markku Pyykönen** Research engineer

**Anna Norman** Project assistant

## Resilience and Development programme (Swedbio)

**Maria Schultz** Director

**Håkan Berg** Senior researcher

**Pamela Cordero** Financial administrator

**Pernilla Malmer** Senior advisor

**Sara Elfstrand** Project officer

**Britta Skagerfält** Programme officer

## BalticSTERN Secretariat

**Siv Ericsson** Head of secretariat

**Henrik Scharin** Expert

**Kerstin Blyh** Expert

## Education

**Lisa Deutsch** Director of studies (Senior lecturer)

**Miriam Huitric** Programme director

**Eleonora Horn** Course assistant

**Theodor Adolfsson** Course assistant

**Viktor Liedner** Course assistant

## Research staff with main theme/programme association

Baltic Nest Institute (BNI)

**Alexander Sokolov** Researcher

**Bo Gustafsson** Managing director

**Bongghi Hong** Consultant

**Bärbel Muller-Karulis** Researcher

**Carl-Magnus Mörth** Professor

**Christoph Humborg** Director

**Dan Reed** Consultant

**Dennis Swaney** Consultant

**Erik Smedberg** Researcher

**Fredrik Wulff** Affiliated senior researcher

**Hanna Eriksson Hägg** Researcher

**Maciej Tomczak** Researcher

**Miguel Rodriguez-Medina** Research engineer

**Oleg Savchuck** Researcher

**Thorsten Blenckner** Senior researcher (incl. themes 3 and 4)

**Johanna Yletyinen** Project assistant

**Barbara Deutsch** Postdoc

**Wijnand Boonstra** Researcher (incl. theme 3)

**Simon Birnbaum** Postdoc (incl. theme 3)

**Susa Niiranen** PhD student (incl. theme 3)

Programme on Ecosystem Change and Society (PECS)

**Albert Norström** Researcher

**Lisen Schultz** Researcher (Schwartz foundation)

The Integrated History and future Of the People on Earth (IHOPE)

**Carole Crumley** Senior researcher

**Sverker Sörlin** Affiliated senior researcher (incl. theme 2)

**Uno Svedin** Affiliated senior researcher (incl. themes 2 and 5)

Planetary boundaries

**Sarah Cornell** Researcher

**Will Steffen** Affiliated senior researcher

Theme 1: Freshwater, food and ecosystem services

**Line Gordon** Researcher (Schwartz foundation)

**Malin Falkenmark** Senior researcher

**Elin Enfors** Researcher

**Louise Karlberg** Researcher

**Mats Lannerstad** Researcher

**Jennie Barron** Affiliated researcher

**Claudia Pahl-Wostl** Affiliated senior researcher

**Hanna Larsson** PhD student

**Lisa Segnestam** PhD student

**Olivia Puill** PhD student

Theme 2: Urban social-ecological systems

**Johan Colding** Affiliated researcher

**Thomas Elmqvist** Affiliated senior researcher

**Henrik Ernstson** Researcher

**Sara Borgström** Researcher

**Åsa Jansson** Researcher

**Stephan Barthele** Postdoc

**Cathy Wilkinson** PhD student

**Marnie Graham** PhD student

Theme 3: Governance of coastal and marine systems

**Beatrice Crona** Assistant professor

**Henrik Österblom** Associate senior lecturer (BEAM)

**Magnus Nyström** Senior lecturer

**Max Troell** Senior researcher

**Tim Daw** Researcher

**Marc Metian** Postdoc (Nereus)

**Andrew Merrie** PhD student (Nereus)

**Jonas Hentati-Sundberg** PhD student

**Martina Kadin** PhD student

**Matilda Valman** PhD student

Theme 4: Regime shifts

**Garry Peterson** Professor

**Oonsie Biggs** Researcher (Branco Weiss Society in Science Fellow)

**Juan Carlos Rocha Gordo** PhD student

**Maike Hamann** PhD student

Theme 5: Global and cross-scale dynamics

**Victor Galaz** Associate senior lecturer (Futura foundation)

**Karl-Göran Mäler** Affiliated senior researcher

**Ann-Sophie Crepin** Affiliated senior researcher (Schwartz foundation)

**Robert Costanza** Affiliated senior researcher

**Brian Walker** Affiliated senior researcher

**Gustav Engström** PhD student

**Brian Walker** Affiliated senior researcher

Theme 6: Adaptive governance, networks and learning

**Per Olsson** Researcher

**Örjan Bodin** Associate senior lecturer (Ekoklim)

**Annica Sandström** Postdoc

**Maria Tengö** Researcher

**Thomas Hahn** Researcher

**Åsa Swartling** Affiliated researcher

**Cecilia Lundholm** Affiliated senior researcher

**Andreas Duit** Senior researcher

**Frances Westley** Affiliated senior researcher

**Jonas Ebbesson** Affiliated senior researcher

**Jenny Beckman** Researcher

**Stephen Lansing** Affiliated senior researcher

**Franciska Rosen** PhD student

**Jacob von Heland** PhD student

**Vanessa Tuinder** PhD student

### Centre board members

**Arild Underdal** (chair), University of Oslo, Norway

**Frances Westley** (vice-chair), University of Waterloo, Canada

**Elinor Ostrom** Indiana University, USA

**Rashid Hassan** University of Pretoria, South Africa

**Thomas Rosswall** former Executive Director ICSU, Sweden

**Brian Walker** CSIRO Sustainable Ecosystems, Australia

**Anders Wijkman** Stockholm Environment Institute, Sweden

**Gudrun Dahl** Stockholm University, Sweden

**Ulrika Mörth** Stockholm University, Sweden

**Bonnie McCay** Rutgers University, USA

**Gretchen Daily** Stanford University, USA

**Pavan Sukhdev** TEEB UNEP, Switzerland

**Leena Srivastava** The Energy and Resource Institute (TERI), India

**Johan Kuylenstierna** Stockholm Environment Institute, Sweden

# Resilience Research School members

## **Rivolala Andriamparany**

Dept. Systems Ecology, Stockholm University  
*Supervisor:* Thomas Elmqvist

## **Arvid Bergsten**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Örjan Bodin, Thomas Elmqvist

## **Brita Bohman**

Faculty of Law, Stockholm University  
*Supervisor:* Jonas Ebbeson

## **Maria Bohn**

KTH Royal Institute of Technology  
*Supervisors:* Sverker Sörlin, Markku Rummukainen

## **Yihun T. Dile**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Johan Rockström, Louise Karlberg

## **Gustav Engström**

Dept. Economics, Stockholm University  
*Supervisors:* John Hassler, Anne-Sophie Crépin

## **Maïke Hamann**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Oonsie Biggs, Belinda Reyers, Thomas Elmqvist

## **Jonas Hentati-Sundberg**

Dept. of Systems Ecology, Natural Resources Management Group, Stockholm University  
*Supervisors:* Henrik Österblom, Joakim Hjelm, Jon Norberg

## **Malin Jonell**

Dept. Systems Ecology, Stockholm University / The Swedish International Centre of Education for Sustainable Development, Gotland  
*Supervisors:* Max Troell, Patrik Rönnbäck (Nils Kautsky)

## **Martina Kadin**

Dept. of Systems Ecology, Stockholm University  
*Supervisors:* Henrik Österblom, Carl Folke, Olof Olsson

## **Hanna Larsson**

Dept. of Systems Ecology, Stockholm University  
*Supervisors:* Line Gordon, Elin Enfors, Jennie Barron, Lowe Börjeson, Örjan Bodin

## **Joshua Lewis**

Dept. Systems Ecology, Stockholm University / Tulane University  
*Supervisors:* Thomas Elmqvist, Henrik Ernstson

## **Emilie Lundkvist**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Jon Norberg, Örjan Ekeberg

## **Rebecka Malinga**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Regina Lindborg, Line Gordon

## **Andrew Merrie**

Dept. of Systems Ecology, Stockholm University  
*Supervisors:* Henrik Österblom, Jon Norberg, Victor Galaz, Per Olsson

## **Helen Moor**

Dept. of Systems Ecology, Stockholm University  
*Supervisor:* Jon Norberg

## **Susa Niiranen**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Thorsten Blenckner, Olle Hjärne

## **Björn Nykvist**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Jon Norberg, Måns Nilsson, Victor Galaz

## **Olivia Puill**

Dept. Human Geography, Stockholm University  
*Supervisors:* Lowe Börjeson, Mats Widgren

## **Cibele Queiroz**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Regina Lindborg

## **Jeff Ranara**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Henrik Ernstson, Thomas Elmqvist

## **Juan Carlos Rocha Gordo**

Dept. of Systems Ecology, Stockholm University  
*Supervisors:* Garry Peterson

## **Franciska Rosen**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Beatrice Crona, Per Olsson, Örjan Bodin

## **Lisa Segnestam**

Dept. Economic History, Stockholm University  
*Supervisors:* Ronny Pettersson, Yvonne Svanström, Julie Cupples

## **Matilda Thyresson**

Dept. of Systems Ecology, Stockholm University  
*Supervisors:* Magnus Nyström, Beatrice Crona, Maricela de la Torre-Castro

## **Vanessa Tuinder**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Maria Tengö, Thomas Elmqvist, Marja Spiereburg

## **Magnus Tuwendal**

Dept. of Systems Ecology, Stockholm University  
*Supervisors:* Thomas Elmqvist

## **Matilda Valman**

Dept. Political Science, Stockholm University  
*Supervisors:* Andreas Duit, Per Olsson, Henrik Österblom

## **Cathy Wilkinson**

Dept. Systems Ecology, Stockholm University  
*Supervisors:* Thomas Elmqvist, Johan Colding

## **Stockholm university cross-faculty PhD group (funded by SRC)**

**Brita Bohman** Department of Law

**Olle Torpman** Department of Philosophy

**Diana Garavito-Bermúdez** Department of Education

**Jennie Svedén** Department of Systems Ecology

**Hanna Larsson** Stockholm Resilience Centre

**Gustav Engström** Stockholm Resilience Centre





## Want to learn more about social-ecological resilience?

Download our research summary brochure at:  
[www.stockholmresilience.su.se/resilience](http://www.stockholmresilience.su.se/resilience)

Stockholm Resilience Centre  
Stockholm University  
SE-106 91 Stockholm, Sweden  
Visiting address: Kräftriket 2B  
+46 8 674 70 70  
[info@stockholmresilience.su.se](mailto:info@stockholmresilience.su.se)  
[www.stockholmresilience.su.se](http://www.stockholmresilience.su.se)