

**Futures of Ecosystem Services
Research Center
(FuturES)**

Annual Report 2012



FuturES: Futures of Ecosystem Services

The concept of ecosystem services—the benefits derived from human interactions with, and appropriation of, the physical structures and processes occurring in (natural and human dominated) ecosystems—has emerged as one of the most important new paradigms of the environmental and sustainability sciences in the last fifteen years. The notion of ecosystem services has the potential to act as a boundary object, capable of bringing together various scientific domains of knowledge that study the interactions and interdependencies between human society and nature. Synthesising such knowledge may provide vital and encompassing understandings, and inform sustainable management, of social-ecological systems.

FuturES, founded in 2012, brings together the diverse expertise of researchers at Leuphana University of Lüneburg across a wide range of disciplines such as communication science, ecology, economics, ethics, political science and management. FuturES seeks to foster genuinely interdisciplinary collaboration between a broad spectrum of the natural and social sciences, and the active involvement of stakeholders and policy makers in shaping research goals and methods (transdisciplinary approach) within the broader conceptual framework and societal goal of sustainability.

FuturES expands on the existing research in the field of ecosystem services by relating the (largely) descriptive concept of ecosystem services to the explicitly normative concept of sustainability. A particular emphasis is on trade-offs and conflicts between multiple services and the uncertainties inherent in the generation and appropriation of ecosystem services. In doing so FuturES seeks to develop new management and governance strategies for the management of ecosystem services with explicit regard to the goal of sustainability.

FuturES is the first research center in Germany that takes a truly encompassing and integrated approach to ecosystem services. This approach places it among a small number of institutions worldwide, seeking not simply to use the concept of ecosystem services within established research approaches, but to actively strengthen the concept as a new tool in the search for sustainability solutions.



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Highlights

The most important events and developments of the past year 2012 for the FuturES research center included the following:

- First, and most important, the FuturES research center was established in January 2012, after two years of preparation, with substantial support from Leuphana University of Lüneburg's president and research office.
- In its initial year, FuturES attracted around 60 members including 11 professors, 19 postdoctoral researchers and 30 PhD students, from a diverse range of scientific fields, providing a breath of knowledge and understanding regarding many aspects of ecosystem services.
- FuturES members were instrumental in organising the highly successful Leuphana Sustainability Summit (February 2012) and the 42nd Annual Meeting of the Ecological Society of Germany, Austria and Switzerland (September 2012), held at Leuphana University of Lüneburg.
- In 2012, FuturES members produced more 64 publications related to ecosystem services, 51 of which were peer reviewed journal articles (including papers in Science, Global Change Biology, Proceeding of the Royal Society and Biological Conservation). In addition, they presented their research at 24 international conferences.
- During 2012, FuturES researchers worked on ecosystem services related research projects with a combined value of €4.4 million, and applied for additional external research grants with a total potential value for Leuphana University of approximately €4.3 million.
- There were more than 20 outgoing research visits by FuturES members and 11 incoming lectures or research visits (to Leuphana University of Lüneburg) related to ecosystem services from international academics.

In this Annual Report, the various achievements of the past year are described in more detail.



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Research Projects

Basic funding for FuturES comes from Leuphana University of Lüneburg. In addition, FuturES research center members are undertaking externally funded research projects with a total value to Leuphana University of Lüneburg of 4.4 million euros.

Externally Funded Projects Completed

<i>Project title</i>	<i>Principal Investigators (at Leuphana)</i>	<i>Period</i>	<i>Source of funding</i>	<i>Funding for Leuphana</i>
KLIMZUG Anpassungsprozesse des Naturschutzes an den Klimawandel	Härdtle, W., Urban, B.	2009 - 2012	German Federal Ministry of Education and Research (BMBF)	€150,000
Biodiversity and its role in the ecosystem services and dis-services concept in agricultural landscapes in Israel	Klein, A.M.	2009 - 2012	Niedersächsisches Ministerium für Wissenschaft und Kultur	€220,000
Multi-trophic interactions of butterflies along a gradient of management intensity in grasslands and forest (BATMAN)	Klein, A.M.	2008 - 2012	Biodiversity Exploratories of the German Research Foundation (DFG)	€180,000
			Total	€525,000

On-going Externally Funded Projects

<i>Project title</i>	<i>Principal Investigators (at Leuphana)</i>	<i>Period</i>	<i>Source of funding</i>	<i>Funding for Leuphana</i>
Ökologische Funktion von halboffenen Verbundkorridoren	Aßmann, T. Härdtle, W.	2012 - 2015	Bundesamt für Naturschutz, FKZ	€349,963
Population genetics meets landscape ecology in the biodiversity exploratories: a case study on genetic differentiation of ground beetle populations (PopGeneLand)	Aßmann, T.	2011 - 2014	German Research Foundation (DFG)	€206,400
Functional effects of herbivores, predators and saproxylics (Subproject 8 of DFG research group BEF China)	Aßmann, T.	2011 - 2014	German Research Foundation (DFG)	€46,800
Distribution, efficiency and policy under uncertainty (ECCUITY) – WP2: Risk externalities, external moral hazard, and insurance	Baumgärtner, S.	2012 - 2015	German Federal Ministry of Education and Research (BMBF)	€343,576
COMTESS - Sustainable coastal land management: Trade-offs in ecosystem services; WP 6.2 (Economic risk analysis) and WP 8 (Trade-offs analysis of ecosystem services)	Baumgärtner, S.	2011- 2015	German Federal Ministry of Education and Research (BMBF)	€325,349
Efficient inter- and intragenerationally just use of ecosystem services (EIGEN)- Sustainability-economic analysis of trade-offs in biodiversity and fishery policy	Baumgärtner, S.	2010 - 2013	German Federal Ministry of Education and Research (BMBF)	€315,925
Fostering sustainable development in Eastern Europe: A case study of ancient agricultural landscapes in Central Romania	Fischer, J.	2010- 2015	Sofja-Kovalevskaja Award / Alexander von Humboldt Foundation	€1,500,000
Experiment zur Ermittlung des Wirkungsschwellenwerts für den Stickstoffeintrag (empirischer Critical Load) in einem eutrophierungsgefährdeten Ökosystem	Härdtle, W.	2011- 2013	German Research Foundation (DFG)	ca €100,000
DFG Research group BEF-China	Härdtle, W.	2011 - 2014	German Research Foundation (DFG)	ca €120,000
Ecological valuation of crop pollination in traditional Indonesian homegardens	Klein, A.M	2012 - 2015	German Research Foundation (DFG)	€227,213



Global evaluation of bee attractiveness and apicultural relevance of agricultural crops	Klein, A.M.	2012 - 2014	BayerCrop Science	€180,550
Academic partnership for the conservation of biodiversity	Michelsen, G., Rieckmann, M., Adomßent, M	2011 - 2014	German Academic Exchange Service (DAAD)	€113,350
Rapid Assessment of the Yale Framework and Adaptation Blueprint for the Pacific Coastal Temperate Rainforests	Von Wehrden, H.	2012 - 2013	Yale Framework	€35,000
			Total	€3,864,126

PhD Research

There are currently 31 PhD students associated with FuturES, engaging in very diverse research related to ecosystem services. The research undertaken ranges from biodiversity and ecosystem function through governance, economics, justice and the impact of nuclear accidents on ecosystem service provision.

PhD Theses Completed

Glotzbach, S., Conflicts between intra- and intergenerational justice in the use of ecosystem services.

Supervisor: Baumgärtner, S., 17.12.2012.

Lang, A., Mechanisms promoting tree species coexistence in subtropical forest ecosystems of China.

Supervisor: von Oheimb, G., Härdtle, W., 12.09.2012.

PhD Theses On-going

Bähring, A., Nitrogen (N) inputs in ecosystems endangered by eutrophication

Biehler, A.M., Sustainability Economic analysis of an ancient large infrastructure project for irrigated agriculture: The Habur channel in Assyria in the 13th Century BC.

Dorresteijn, D., The Future of birds and large carnivores in Romania, Transylvania

Drescher, N., Plant-insect interactions and the ecology of social bees in temperate and (sub)tropical regions

- Dziedek, C., Interactive effects of nitrogen deposition and drought on forest ecosystems
- Eggers, J., Fragmentation effect and traffic intensity on populations flightless beetle species
- Engler, J.-O., Heterogeneity and decision making: some theoretical aspects from economics
- Gralla, F., Sustainable perspective on nuclear energy and possible challenges
- Groeneveld, J. How oil plant cultivation should be designed to safeguard ecosystem services and biodiversity
- Hirsch, H., Investigations on the invasion success of *Ulmus pumila* - a multi-continental survey
- Hoberg, N., Economic analysis of value trade-offs and sustainability policy
- Homburg, K., Genetic differentiation and large-scale patterns of genetic diversity
- Laws, N., Tangible Sustainability Policy: Possibilities and constraints of the establishment of biodiversity as a cross-cutting issue on the German federal level
- Li, Y., Tree growth and aboveground competition in subtropical forest ecosystem in southeast China
- Loos, J., The future of plants and butterflies in Transylvania
- Marcus, T., The effects of land use type and intensity on genetic diversity of ground beetles
- Miczajka, V.L., Seed dispersal and seed predation as ecosystem functions
- Milcu, A., Cultural ecosystem services and historical changes
- Moser, C., Certification and sustainable development in bio-energy production
- Mikulcak, F., Fostering sustainable development in Eastern Europe
- Oyundari, C., Sustainable use of oases in the Gobi desert
- Pereira-Peixoto, M-H., Pollinators ecology in temperate and tropical regions
- Schäckermann, S., Biodiversity and its role in the ecosystem services and dis-services concept in agricultural landscapes in Israel
- Staab, M., Multitrophic interaction-networks
- Stumpf, K.H., The justice dimension of sustainability. Conceptual foundations and implications for global institutional implementation in the field of biodiversity and ecosystem services
- Venjakob, C., Effects of plant biodiversity on plant-pollinator interactions and pollination
- Zumstein, P., Biodiversity and ecosystem function China

Publications

Research results of FuturES have been published in a wide range of books and academic journals – 64 publications altogether, including 51 articles in international peer-reviewed journals. Many interdisciplinary publications have been written with co-authors from other academic disciplines and institutions.

International Peer-reviewed Journal Publications

1. Abson, D.J., Dougill, A.J., Stringer L.C. (2012). Spatial mapping of broad scale socio-ecological vulnerability to environmental change in Southern Africa, *Applied Geography*, 35, 515-524.
2. Abson, D.J., Fraser E.D.G., and Benton T.G. (in press). Landscape diversity and the resilience of agricultural incomes: a portfolio analysis of land use patterns and economic returns from lowland UK agriculture, *Agriculture and food security*.
3. Allan, E., Weisser, W.W., Fischer, M., Schulze, E.D., Weigelt, A., Roscher, C., Baade, J., Barnard, R.L., Beßler, H., Buchmann, N., Buscot, F., Ebeling, A., Eisenhauer, N., Engels, C., Fergus, A.J.F., Gleixner, G., Gubsch, M., Habekost, M., Halle, S., Klein, A.M., König, S., Kowalski, E., Kreutziger, Y., Kertscher, I., Kummer, V., Kuu, A., Lange, M., Lauterbach, D., Le Roux, X., Marquard, E., Migunova, V.D., Milcu, A., Müller, R., Mwangi, P., Niklaus, P.A., Oelmann, Y., Petermann, J.S., Poly, F., Rottstock, T., Rosenkranz, S., Sabais, A., Scherber, C., Scherer-Lorenzen, M. Scheu, S., Schmitz, M., Schumacher, J., Soussana, J.F., Steinbeiss, S., Schwichtenberg, G., Temperton, V., Tschardtke, T., Voigt, W., Wilcke, W., Wirth, C. and Schmid, B. (in press). A comparison of the strength of biodiversity effects across multiple functions. *Oecologia*.
4. Assmann, T., Buse, J., Chikaturonoy, V., Drees, C., Friedman, A.L.L., Härdtle, W., Levanony, T., Renan, I., Timm, A. and Wrase, W. (2012). The ground beetle tribe Trechini (Coleoptera, Carabidae) in Israel and adjacent regions. *Spixiana* 35, 193-208.
5. Baumgärtner, S., Glotzbach, S., Hoberg, N., Quaas, M.F. and Stumpf, K.H. (2012). Economic analysis of trade-offs between justices. *Intergenerational Justice Review*, 1/2012, 4–9.
6. Blitzer, E.J., Dormann, C.F., Holzschuh, A., Klein, A.M., Rand, T.A. and Tschardtke, T. (2012). Spillover of functionally important organisms between managed and natural habitats. *Agriculture, Ecosystems and Environment*, 146, 34-43.

7. Brittain, C., Williams, N., Kremen, C. and Klein, A.M. (2012). Synergistic effects of non-Apis bees and honey bees for pollination services. *Proceeding of the Royal Society B.*, online first available.
8. Brittain, C., Kremen, C. and Klein, A.M. (2012). Biodiversity buffers pollination in changing environmental conditions. *Global Change Biology*, 19, 540–547.
9. Buse, J., Assmann, T., Friedman, A.L.L., Pavilec, T. and Rittner, O. (in press). Wood-inhabiting beetles (Coleoptera) associated with oaks in a global biodiversity hotspot: case study and check-list for Israel. *Insect Conservation and Diversity*.
10. Dieker, P., Drees, C., Schmitt, T. and Assmann, T. (2013). Low genetic diversity of a high mountain burnet moth species in the Pyrenees. *Conservation Genetics*, in press.
11. Ebeling, A., Klein, A.M., Weisser, W.W. and Tschamntke, T. (2012). Multitrophic effects of experimental changes in plant diversity on cavity-nesting bees, wasps, and their parasitoids. *Oecologia*, 169, 453-465.
12. Fichtner, A., Sturm, K., Rickert, C., Härdtle, W. and Schrautzer, J. (2012). Competition response of European beech *Fagus sylvatica* L. varies with tree size and abiotic stress: minimizing anthropogenic disturbances in forests. *Journal of Applied Ecology*, 49, 1306-1315.
13. Fischer, J., Hartel, T. and Kuemmerle, T. (2012). Conservation policy in traditional farming landscapes. *Conservation Letters*, 5, 167-175.
14. Friedrich, U., von Oheimb, G., Kriebitzsch, W.U., Schleßelmann, K., Weber, M.S. and Härdtle, W. (2012). Nitrogen deposition increases susceptibility to drought - experimental evidence with the perennial grass *Molinia caerulea* (L.) Moench. *Plant and Soil*, 353, 59-71.
15. Friedrich, U., von Oheimb, G., Kriebitzsch, W.U., Schleßelmann, K., Weber, M.S. and Härdtle, W. (2012). Nitrogen deposition increases susceptibility to drought - experimental evidence with the perennial grass *Molinia caerulea* (L.) Moench. *Plant and Soil*, 353, 59-71.
16. Garibaldi, L.A., Steffan-Dewenter, I., Winfree, R., Aizen, M.A., Bommarco, R., Cunningham, S.A., Kremen, C., Carvalheiro, L.G., Harder, L.D., Afik, O., Bartomeus, I., Benjamin, F., Boreux, V., Cariveau, D., Chacoff, N.P., Dudenhöffer, J.H., Freitas, B.M., Ghazoul, J., Greenleaf, S., Hipólito, J., Holzschuh, A., Howlett, B., Isaacs, R., Javorek, S.K., Kennedy, C.M., Krewenka, K., Krishnan, S., Mandelik, Y., Mayfield, M.M., Motzke, I., Munyuli, T., Nault, B.A., Otieno, M., Petersen, J., Pisanty, G., Potts, S.G., Rader, R., Ricketts, T.H., Rundlöf, M., Seymour, C.L., Schuepp, C., Szentgyörgyi, H., Taki, H., Tschamntke, T., Vergara, C.H., Viana, B.F., Wanger, T.C., Westphal, C., Williams, N., Klein, A.M. (in press). Wild pollinators enhance fruit set of crops regardless of honey-bee abundance. *Science*.
17. Geissler, C., Lang, A.C., von Oheimb, G., Härdtle, W., Baruffol, M. and Scholten, T. (2012). Impact of tree saplings on the kinetic energy of rainfall – The importance of stand density, species identity and

- tree architecture in subtropical forests in China. *Agricultural and Forest Meteorology*, 156, 31-40.
18. Glotzbach, S. (in press). Ecosystem services and distributive justice. Considering access rights to ecosystem services in theories of distributive justice. *Ethics, Policy & Environment*.
 19. Glotzbach, S. (in press). Reconciling intragenerational and intergenerational environmental justice in Philippine agriculture: The MASIPAG farmer network, *Ethics, Policy & Environment*.
 20. Glotzbach, S. and Baumgärtner, S. (2012). The relationship between intragenerational and intergenerational ecological justice. *Environmental Values*, 21(3), 331–355.
 21. Habel, J.C., Ulrich, W. and Assmann, T. (in press). Allele elimination recalculated: nested subset analyses for molecular biogeographical data. *Journal of Biogeography*.
 22. Homburg, K., Schuldt, A., Drees, C. and Assmann, T. (in press). Broad-scale geographic patterns in body size and hind wing development of western Palaearctic carabid beetles (Coleoptera: Carabidae). *Ecography*,.
 23. Hudewenz, A., Klein, A.M., Scherber, C., Stanke, L., Tschardt, T., Vogel, A., Weigelt, A., Weisser, W.W. and Ebeling, A. (2012). Herbivore and pollinator responses to grassland management intensity along experimental changes in plant species richness. *Biological Conservation*, 150, 42-52.
 24. Kennedy, C.M., Lonsdorf, E., Neel, M.C., Williams, N.M., Ricketts, T.H., Winfree, R., Bommarco, R., Brittain, C., Burley, A.L., Cariveau, D., Carneiro, L.G., Chacoff, N.P., Cunningham, S.A., Danforth, B.N., Dudenhöffer, J.H., Elle, E., Gaines, H.R., Gratton, C., Greenleaf, S.S., Holzschuh, A., Isaacs, R., Javorek, S.K., Jha, S., Klein, A.M., Kremen, K., Mandelik, Y., Mayfield, M.M., Morandin, L., Neame, L.A., Otieno, M., Park, M., Potts, S.G., Rundlöf, M., Saez, A., Steffan-Dewenter, I., Taki, H., Tuell, J.K., Viana, B.F., Veldtman, R., Westphal, C. and Kremen, C. (in press). A global quantitative synthesis of local and landscape effects on native bee pollinators in agroecosystems. *Ecology Letters*.
 25. Klein, A.M., Brittain, C., Hendrix, S.D., Thorp, R., Williams, N. and Kremen, C. (2012). Wild pollination services to California almond rely on semi-natural habitat. *Journal of Applied Ecology*, 49, 723-732.
 26. Krause, H., von Wehrden, H., Schuldt, A. and Assmann, T. (in press). Stenotopy and eurytopy - distribution models as a tool for estimating niche overlap in two spider species. *Entomologia Generalis*.
 27. Lang, A., Härdtle, W., Bruehlheide, H., Kröber, W., Schröter, M., von Wehrden, H. and von Oheimb, G. (2012). Functional diversity increases horizontal and vertical heterogeneity of canopies in a Chinese subtropical forest. *Ecological Research*, 27, 181-189.
 28. Lang, A., Härdtle, W., Baruffol, M., Böhnke, M., Bruehlheide, H., Schmid, B., von Wehrden, H. and von Oheimb, G. (2012). Mechanisms promoting tree species co-existence: Experimental evidence with saplings of subtropical forest ecosystems of China. *Journal of Vegetation Science*, 23, 837–846.

29. Larson, B.M.H., Kueffer, C. and the ZIF Working Group (Brock, A., Edwards, P., Gross, M., Hall, M., Higgs, E., Jentsch, A., Jeschke, J.M., Klein, A.M., Wynne, B. (in press). Managing invasive species amidst high uncertainty and novelty. *Trends in Ecology and Evolution*.
30. Lentini, P.E., Gibbons, P., Martin, T., Fischer, J. and Cunningham, S.A. (2012). Supporting wild pollinators in a temperate agricultural landscape: Maintaining mosaics of natural features and production. *Biological Conservation*, 149, 84-92.
31. Lüdeke-Freund, F., Walmsley, D., Plath, M., Wreesmann, J. and Klein, A.M. (2012). Sustainable plant oil production for aviation fuels - Assessment challenges and consequences for new feedstock concepts. *Sustainability Accounting, Management and Policy Journal*, 3, 186-217.
32. Munro, N.T., Wood, J., Lindenmayer, D.B. and Fischer, J. (2012). Assessing ecosystem function of restoration plantings in south-eastern Australia. *Forest Ecology and Management*, 282, 36-45.
33. Motzke, I., Tschardtke, T., Navjot, S., Klein, A.M. and Wanger T. (in press). Ant seed predation, pesticide applications and farmers' income from tropical multi-cropping gardens. *Agricultural and Forest Entomology*.
34. Olbrich, R., Quaas, M.F. and Baumgärtner, S. (2012). A survey of commercial cattle farmers in semi-arid rangelands of Namibia on risk, sustainability and management. *Schmollers Jahrbuch / Journal of Applied Social Science Studies*, 132(3), 463–471.
35. Pufal, G. and Klein, A.M. (in press). Post-dispersal seed predation of three grassland species in a plant diversity experiment. *Journal of Plant Ecology*.
36. Quaas, M.F. and Baumgärtner, S. (2012). Optimal grazing management rules in semi-arid rangelands with uncertain rainfall. *Natural Resource Modeling*, 25(2), 364–387.
37. Quaas, M.F., van Soest, D. and Baumgärtner, S. (in press), Complementarity, impatience, and the resilience of natural-resource-dependent economies, *Journal of Environmental Economics and Management*.
38. Schindler, S., von Wehrden, H., Poirazidis, K., Wrba, T. and Kati, V. (2012). Multiscale performance of landscape metrics as indicators of species richness of plants, insects and vertebrates. *Ecological Indicators*. In press.
39. Schleuning, M., Klein, A.M., Abrahamczyk, S., Alarcón, R., Albrecht, M., Andersson, G.K.S., Bazzani, S., Böhning-Gaese, K., Bommarco, R., Dalsgaard, B., Dehling, D.M., Gotlieb, A., Hagen, M., Hickler, T., Holzschuh, A., Kaiser-Bunbury, C.N., Kreft, H., Morris, R.J., Sandel, B., Sutherland, W.J., Svenning, J.C., Tschardtke, T., Watts, S., Weiner, C.N., Werner, M., Williams, N.M. Winqvist, C., Dormann, C.F. and Blüthgen, N. (2012). Specialization of mutualistic interaction networks decreases towards tropical latitudes. *Current Biology*, 22, 1-7.
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Other Publications

1. Adomßent, M. (2012). Thesen zum Stellenwert und zu Potenzialen gerechtigkeitsbasierter Naturschutzkommunikation. In: Bundesamt für Naturschutz (Hg.): *Gerechtigkeitsargumente – Chancen und Herausforderungen für die Naturschutzkommunikation*. Dokumentation eines interdisziplinären Workshops am 29. März 2012 im BfN, Bonn, 37 – 41.
2. Baumgärtner, S. (2012). Normative Begründung der Nachhaltigkeitsökonomie. In: Studierenden - Initiative Greening the University e.V. (Hrsg.), *Wissenschaft für nachhaltige Entwicklung! Multiperspektivische Beiträge zu einer verantwortungsbewussten Wissenschaft*, Metropolis-Verlag, Marburg, 273–298.
3. Fischer, J., Brittain, C. and Klein A.M. (2012). Biodiversity-friendly farming. *Encyclopedia. Biodiversity 2011*, Elsevier Scientific Publishing, 16.
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8. Olbrich, R., Quaas, M.F. and Baumgärtner, S. (2012). Characterizing commercial cattle farms in Namibia: risk, management and sustainability. *University of Lueneburg Working Paper Series in Economics*, Working Paper No. 248, August 2012.
9. Rieckmann, M. (2012). Biodiversität. In: Gregor Lang-Wojtasik und Ulrich Klemm (Hg.): *Globales Lernen. Handlexikon*. 1. Aufl. Münster: Klemm u. Oelschläger, 36–39.
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12. Vanbergen, A.J., Ambrose, N., Aston, D., Biesmeijer, J.C., Bourke, A., Breeze, T., Brotherton, P., Brown, M., Chandler, D., Clook, M., Connolly, C.N., Costigan, P., Coulson, M., Cresswell, J., Dean, R., Dicks, I., Felicioli, A., Fojt, O., Gallai, N., Genersch, E., Godfray, C., Grieg-Gran, M., Halstead, M., Harding, M., Harris, B., Hartfield, C., Heard, M.S., Herren, B., Howarth, J., Ings, T., Kleijn, D., Klein, A.M., Kunin, W.E., Lewis, G., MacEwen, A., Maus, C., McIntosh, L., Millar, N.S., Neumann, P., Ollerton, J., Olschewski, R., Osborne, J.L., Paxton, R.J., Pettis, J., Phillipson, B., Potts, S.G., Pywell, R., Rasmont, P., Roberts, S., Salles, J.M., Schweiger, O., Sima, P., Thompson, H., Titera, D., Vaissiere, B., Van der Sluijs, J., Webster, S., Wentworth, J., Wright, G.A., (2012). Insect pollinators: linking research and policy. Church House Conference Centre, Dean's Yard, Westminster, London, 14 February 2012. *Workshop Report*, 35.
13. Willner, W. and Härdtle, W. (2012), Conservation of European beech forests: The importance of evolutionary and ecogeographical aspects. *BfN-Skripten*, 327, 23-28.

Conference Contributions

FuturES members contributed to 24 international conferences (only conferences with open calls and competitive selection of contributions are listed) in 13 different countries.

- *45th Population Genetics Group Meeting*, Nottingham, UK, January 4-7, 2012.
- *2nd World Congress of the Public Choice Societies*, Miami, USA, March 3-8, 2012.
- *2nd Global Conference of the International Partnership for the Satoyama Initiative*, Nairobi, Kenya, March 13-14, 2012.
- *TEEB Conference: Mainstreaming the Economics of Nature*, Leipzig, Germany, March 19-22, 2012.
- *Leuphana Sustainability Summit*, Lüneburg, Germany, February March 29 – April 2, 2012.
- *Research Conference on Microinsurance*, Enschede, The Netherlands, April 11-13, 2012.
- *Sustainable Resource Use and Economic Dynamics (SURED)*, Ascona, Switzerland, June 3-7, 2012.
- *International Political Science Conference*, Madrid, Spain, June 9, 2012.
- *13th Annual Conference of the Association for Public Economic Theory*, Taipei, Taiwan, June 12-14,



2012.

- *Ecological Economics and Rio +20. Contributions and Challenges for a Green Economy*, Rio de Janeiro, Brasil, June 16-19, 2012.
- *19th Annual Conference of the European Association of Environmental and Resource Economists (EAERE)*, Prague, Czech Republic, June 27-30, 2012.
- *Annual meeting of the International Association of Vegetation Science*, Mokpo ,South Korea, July 23-28 2012.
- *97th Annual Meeting of the Ecology Society of America*, Portland, USA, August 5-10, 2012.
- *3rd International Sustainability Conference*, Basel, Switzerland, August 29-31, 2012.
- *3rd European Congress of Conservation Biology*, Glasgow, UK, August 28 – September 1, 2012.
- *5th European Conference of Apidology*, Halle, Germany, September 3-7, 2012.
- *Annual Conference of the German Economic Association*, Goettingen, September 9-12, 2012.
- *42nd Annual Meeting of the Ecological Society of Germany, Austria and Switzerland (GfÖ)*, Lüneburg, Germany, September 10-14, 2012.
- *Resource Economics, Biodiversity Conservation and Development (BIOECON)*, Cambridge, UK, September 19-20, 2012.
- *74th International Atlantic Economic Conference*, Montreal, Canada, October 4-7, 2012.
- *60th Annual Meeting of the Entomological Society of America*, Knoxville, TN, USA, November 11-14, 2012.
- *Biodiversity and Society*, Goettingen, Germany, November 14-16, 2012.
- *Biodiversity: the challenges in a changing environment of SE Asia*, Mahasarakham, Thailand, December 3-7, 2012.
- *Annual meeting of the British Ecological Society*, Birmingham, UK, December 17-20, 2012.

Services to the Scientific Community

Scientific Events Organized

Members of FuturES have organized, or served on the organizing committee of the following international conferences and workshops.

- 1) Assmann, T. (with Walter Durka, UFZ), Session on “Molecular Biology” at the 42th Annual Meeting of the Ecological Society of Germany, Switzerland and Austria: From basic ecology to the challenges of modern society. Leuphana University, Lüneburg, Germany, September 10 – 14, 2012.
- 2) Baumgärtner, S. (with M.F. Quaas, University of Kiel), Workshop: Effiziente inter- und intragenerationell gerechte Nutzung von Ökosystemdienstleistungen – Zielkonflikte in der Biodiversitäts- und Fischereipolitik. Kiel, Germany. December 13–14, 2012.
- 3) Baumgärtner, S. (with M.F. Quaas, University of Kiel), Workshop: Responsibility for Sustainability – Combining the Perspectives of Economics and Philosophy. Camp Reinsehlen, Germany. June 21–24, 2012.
- 4) Brittain, C. (with C. Mayer, T. Diekötter and A. Kolb) Session on “Pollination Ecology” 42th Annual Meeting of the Ecological Society of Germany, Switzerland and Austria: From basic ecology to the challenges of modern society. Leuphana University, Lüneburg, Germany, September 10 – 14, 2012.
- 5) Fischer, J. (with J. Settele, UFZ), Session on “Ecosystem Services” 42th Annual Meeting of the Ecological Society of Germany, Switzerland and Austria: From basic ecology to the challenges of modern society. Leuphana University, Lüneburg, Germany, September 10 – 14, 2012.
- 6) Klein, A.M., Fischer, J. and von Wehrden, H., 42th Annual Meeting of the Ecological Society of Germany, Switzerland and Austria: From basic ecology to the challenges of modern society. Leuphana University, Lüneburg, Germany, September 10 – 14, 2012.
- 7) Klein, A.M., (with Kovács, A. and Mandelik, Y.), Symposium at the 3rd European Congress of Conservation Biology in Glasgow, UK. August 28 – September 1, 2012.
- 8) Klein, A.M., (with Vanbergen, A.J. et al.), Insect pollinators: linking research and policy. London, 14 February 2012.
- 9) Klein, A.M. (with Pufal, G.), Workshop “Biodiversity and pollination services – from basic and applied science to stakeholders and policy” at the Sustainability Summit. Leuphana University of Lüneburg, Germany. February 29 – March 2, 2012.
- 10) Michelsen, G., Workshop within the framework of the 31st Deutscher Naturschutztag: Biologische

Vielfalt und Bildung für nachhaltige Entwicklung. Erfurt, Germany. September 21, 2012.

11) von Wehrden, H. and Klein, A.M., Session on “Biodiversity and ecosystem services” at the Leuphana Sustainability Summit. Leuphana University of Lüneburg, Germany. February 29 – March 2, 2012.

Editorial Services

FuturES members edited, or were co- or subject editors for, the following international peer-reviewed journals:

- Agriculture and Forest Entomology (Klein, A.M.)
- Biotropica (Klein, A.M.)
- Conservation Letters (Fischer, J.)
- Ecological Economics (Baumgärtner, S.)
- Ecology and Society (Fischer, J.)
- Journal of Pollination Ecology (Klein, A.M.)
- Sustainability (Lang, D., Klein, A.M.)

Advisory Services

FuturES members sat on the following scientific steering committees, advisory boards, etc:

- Baumgärtner, S., PhD scholarship program, German Federal Foundation for the Environment (DBU)
- Klein, A.M., German Research Foundation (DFG) advisory board for the field “Ecology of agricultural landscapes”
- Fischer, J., Expert scientific advisory committee to the Mihai Eminescu Trust, Romania



Other Scientific Exchange

Outgoing Research Visits

- Aßmann, T., Tel Aviv University, Israel. March 27 – April 5, 2012 and December 11 – 16, 2012.
- Aßmann, T., Coleoptera Collection of the Hungarian Natural History Museum, Hungary. December 6 – 8, 2012.
- Aßmann, T., National Natural History Museum of Czech Republic. October 3 – 9, 2012.
- Aßmann, T., Muséum National d'Histoire Naturelle, Paris (CNRS, IMRA), France. August 18 – 23, 2012 and September 26 – October 2, 2012.
- Baumgärtner, S., University of Manchester, UK, December 5, 2012.
- Baumgärtner, S., University of Münster, Germany, April 11, 2012.
- Baumgärtner, S., University of Kiel, Germany, March 12 – 13, 2012 and December 12 – 14, 2012.
- Baumgärtner, S. and Engler, J.O., University of Potsdam, May 11, 2012.
- Baumgärtner, S. and Engler, J.O., University of Rostock, January 11 – 13, 2012.
- Härdtle, W., University of Copenhagen, Denmark, June 2012.
- Härdtle, W., University of Bergen, Norway, June 2012.
- Hanspach, J., Stanford University, USA. February 2012.
- Heinrichs, H., Pontificia Universidad Católica del Perú, Peru. December 9 – 16, 2012.
- Hoberg, N., ETH Zurich, Switzerland. March 19 – June 10, 2012.
- Klein, A.M., University of Berne, Switzerland. May 2012.
- Klein, A.M., University of Jena, Germany. May 2012.
- Klein, A.M., University of Freiburg, Germany. March 2012.
- Klein, A.M., ETH Zurich, Switzerland. January 2012.
- Otte, I., Pontificia Universidad Católica del Perú, Peru. November 14 – 28, 2012.
- Richter, S., Pontificia Universidad Católica del Perú, Peru. November 14 – 26, 2012.
- Rieckmann, M., Pontificia Universidad Católica del Perú, Peru. September 5 – 16, 2012.



Incoming Research Visits

- Bautista, C., Pontificia Universidad Católica del Perú, Peru. November 24 – December 11, 2012.
- Becker, C.U., Pennsylvania State University, USA. March 5 – 8, 2012 and December 16 – 19, 2012.
- Daily, G.C., Stanford University, USA. September 11-12, 2012.
- Gardner, T., University of Cambridge, UK. September 10-13, 2012.
- Peterson, G., Stockholm Resilience Centre, Sweden. September, 10-14, 2012.
- Ritchie, E., Deakin University, Australia. November 26-28, 2012.
- Sherren, K., Dalhousie University, Canada. March 2012.
- Timaná, M., Pontificia Universidad Católica del Perú, Peru. November 24 – December 1, 2012.

Invited Seminar Presentations by External Researchers

- Batary, P., Georg-August Universität Göttingen, Germany. December 29, 2012.
- Daily, G.C., Stanford University, USA. September 11, 2012.
- Drupp, M., University of Tübingen, Germany. January 18, 2012.
- Gardner, T., University of Cambridge, UK. September 11, 2012.
- Meya, J., University of Bremen, Germany. January 18, 2012.
- Peterson, G., Stockholm Resilience Centre, Sweden. September 13, 2012.
- Ritchie, E., Deakin University. November, 27, 2012.
- Timaná, M., Pontificia Universidad Católica del Perú. November 27, 2012.



Looking ahead

Our **long-term goal** is to have an international impact through cutting-edge contributions in research and knowledge transfer in the area of ecosystem services. In view of this goal, in the **upcoming year** we will continue to add to the scientific community's knowledge and understanding of ecosystem services through peer-reviewed publications, research visits and conference presentations. We intend to further extend and strengthen our network of international scientific collaborations by seeking external international partners for FuturES.

Our intention is for FuturES to become an internationally recognised center of research excellence in the field of ecosystem service research, capable of helping shape the ecosystem services research agenda. Now, some 30 years after the term "ecosystem services" was first coined there is a pressing need for the scientific community to stop and reflect on the purpose and direction of ecosystem service research. In particular, there is a need to consider the role of the ecosystem services concept within the broader conceptual frameworks of sustainability science and the normative agenda of sustainability. FuturES and Leuphana University of Lüneburg are now placed in a strong position to engage in and shape these important debates.



Contact

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