

# PROF. DR. RALF SEPPELT

Dipl. Math. (Applied Mathematics)

## Home Address

Herloßsohnstraße 17b • 04155 Leipzig • Germany • (p) +49 341 230 81 37 •  
(m) +49 151 59932727 • (e) [rseppelt@me.com](mailto:rseppelt@me.com)

## Office Addresses

Department Computational Landscape Ecology • Helmholtz Centre for  
Environmental Research (UFZ) • 04318 Leipzig • Germany • (p) +49 341  
235 1250 • (f) +49 341 235 1939 • (e) [ralf.seppelt@ufz.de](mailto:ralf.seppelt@ufz.de) • (w) [www.ufz.de/cle](http://www.ufz.de/cle)

Institute of Geoscience & Geography • Martin-Luther-University Halle-  
Wittenberg • Von-Seckendorff-Platz 4 • 06102 Halle (Saale) • Germany

## CURRICULUM VITAE

### Scientific Career / Education

---

- 2011 Graduation from Helmholtz Academy on *Scientific Management*
- 2004 Habilitation, Venia legendi *Geoökologie/Umweltsystemanalyse*
- 1997 Doctorial Degree „with distinction“ in natural science in *Agroecology and Systemanalysis* at Institute for Geocology, TU Braunschweig, Germany
- 1992 Research fellow at Hahn-Meitner-Institut Berlin, Institute of Computer Science, Berlin, Germany
- 1994 Master/diploma in applied mathematics at University of Clausthal, Germany

### Positions

---

- 2004 till present (re-appointment 2008, 2013, 2018)  
Head of Department for Computational Landscape Ecology at Helmholtz Centre for Environmental Research (UFZ), Leipzig. [www.ufz.de/cle](http://www.ufz.de/cle)
- 2004 till present  
Full professor for Landscape Ecology, faculty member at Geography Department at Martin-Luther University Halle-Wittenberg
- 2019 Visiting Scholar  
Purdue University, Department Agricultural Economics, Lecturing and independent research (March 2019)
- 2017 Visiting Scholar  
University Southampton, Department of Geography Agri, Lecturing and independent research (Feb. 2017)
- 2010 & 2016 Visiting Scholar  
University Standford, Woods Institute for the Environment, Lecturing and independent research on ecosystem services and biodiversity (Dec. 2010, Sept. 2019)
- 2014 Visiting Scholar  
Stockholm Resilience Centre (SRC), Lecturing and independent research global limitation of renewable resources (Sept. 2014)

2009 – 2016

Speaker of UFZ Research Area „Land use options”, one out of 5 topics in the research programme „Terrestrial Ecosystems“ of the Helmholtz Association, located at the UFZ.

2000

Research Associate at Institute for Ecological Economics, Centre for Environmental Research, Univ. Maryland, USA (March – July 2000)

1997 – 2004

Research Assistant and Lecturer at Institute for Geoecology, University Braunschweig, Germany.

1994 – 1997

Ph.-D. Student at the Collaborative Research Center 179, „Modelling of crop growth“-Project and Doctorate degree at University Braunschweig, Germany

## Advisory Borads, Committees, Science-Policy

---

### Scientific Advisory Bodies, Science-Policy

- Lead Author of the *Global Assessment* of the Intergovernmental Platform for Biodiversity and Ecosystem Servicea (IPBES) (2016-2019)
- Member of Deutsche Akademie der Naturforscher Leopoldina for the special synthesis report on Biodiversity decline in Agrcultural Landscapes
- National Science Foundation Germany (DFG), Commision of the Senate on Agroecosystem Research (2012-2018)

### Review Panels

- Hochschulrat Universität Hohenheim (2012-2016, 2016 - ongoing)
- Scientific Technical Council UFZ (since 2004 - ongoing)
- Scientific Advisory Board CIRS, Universität Kassel (2012 - 2016)
- Evaluation Committee of Potsdam Institute of Clikate Impact Reserch (PIK), (2007)

### Appointment Committees

- Professorship appointment *Ökosystemanalyse und Simulation*, University Bayreuth (2020)
- Professorship appointment *Methods on Sustainability*, Leuphana University Lüneburg, Germany (2017)
- Appointment of *Scientific Directorate WSL* and ETH Zurich, Swiss ETH-Rat, Zurich, Swiss (2010-2011)
- Professorship appointment *Ecosystem Services*, Uni Jena/iDiv/UFZ, Germany (2012)
- Professorship appointment *Makroecology*, Uni Halle, Germany (2012)
- Professorship appointment *Ecological Modelling*, Uni Osnabrück, Germany (2011)
- Professorship appointment *Environmental Institutional Economy*, Universität Leipzig, Germany (2009)
- Professorship appointment *Applied Environmental System Analysis*, University Osnabrück (2006)
- Professorship appointment *Numerical Mathematics*, Clausthal-Zellerfeld, Germany (1993)

## Prices, Awards

---

### 2020

UFZ Price for Science Communication (granted to the UFZ authors group of IPBES synthesis reports)

### 2010

Biannual Medal of the International Society for Environmental Modelling and Software

## Editorial Boards, Reviews

---

### Project and Institutional Reviews

- German Science Foundation – DFG (ongoing)
- Federal Ministry of Education and Research – BMBF (ongoing)
- Environmental Protection Agency, Ireland (2006)
- European Research Council – ERC (ongoing)

### Associate Editor and Editorial Board Membership

- Associate Editor: Environmental Modelling and Software (till 2019), Landscape Ecology (since 2019)
- Guest Editor (Special Issues):
  - Ecological Modelling,
  - Ecological Indicators,
  - Environmental Research Letters

### Journal Reviews

- |   |  |
|---|--|
| ▪ Agriculture, Ecosystems and Environment         | ▪ Management                                     |
| ▪ Basic and Applied Ecology                       | ▪ Energy Policy                                  |
| ▪ Current Opinion in Environmental Sustainability | ▪ Landscape and Urban Planning                   |
| ▪ Ecology and Society                             | ▪ Journal of Photogrammetry and Remote Sensing   |
| ▪ Ecological Informatics                          | ▪ Journal for Applied Ecology                    |
| ▪ Ecological Engineering                          | ▪ Hydrology and Earth System Sciences            |
| ▪ Ecological Economics                            | ▪ Proceedings of the National Academy of Science |
| ▪ Ecological Indicators                           | ▪ Nature   |
| ▪ Ecological Modelling                            | ▪ Nature Communications                          |
| ▪ Ecosystem Services                              | ▪ Nature Sustainability                          |
| ▪ Environmental Science & Policy                  | ▪ Scientific Data                                |
| ▪ Environmental Modelling & Software              | ▪ Proceedings of the Royal Society B             |
| ▪ Global Environmental Change                     | ▪ Science  |
| ▪ Journal of Environmental                        |  |

## Academic Societies

---

### Presidency

- Vice President of International Society for Environmental Modelling and Software - iSEMS (2008-2014)

### Memberships

- Faculty Opinion
- Gesellschaft für Ökologie (GfÖ)
- International Association for Landscape Ecology (IALE)
- Ecosystem Service Partnership (ESP)
- Ecology Society of America (ESA)

## PUBLICATIONS

### Summary (1995-2020)

		Web of Science	Scopus	Google Scholar
<i>Peer reviewed journal publications</i>	Number of publications	105	123	
	Citations total/without self-citation	5.181 / 4.932	5.551 / NA	8.501 / NA
	Average citations per document	49,34	44,25	
	Highly cited papers	5		
	h-index	40	40	50
	Number of co-authors		589	
<i>Book publications</i>	Single-author: 2	Edited books: 4	Book chapters: 10	
<i>Policy advisory papers</i>	IPBES, Leopoldina, DFG, Deutscher Bundestag, NKGCF; 8 publications			
<i>Interviews, Press</i>	ARTE, Die Zeit, WDR 5, Deutsche Welle, etc.; 13 press releases			

### Publications, I personally recommend because...

... the paper provides my vision statement on science

**Seppelt R**, Beckmann M, Václavík T & Volk M. 2018. The Art of Scientific Performance. *Trends in Ecology & Evolution* 10.1016/j.tree.2018.08.003.

... it was influential outside its scientific realm entering political papers

Lautenbach, S, **Seppelt, R**, J Liebscher, CF Dormann. 2012. Spatial and temporal trends of global pollination benefit. *PlosONE*. 7(4): e35954

... of its quite different format

**Seppelt, R**, F Müller, B Schröder, M Volk. 2009. Challenges of simulating complex environmental systems at the landscape scale: A controversial dialogue between two cups of espresso. *Ecological Modelling*. 220(24): 3481-3489.

... its incredible response in the media

**Seppelt, R**, AM Manceur, J Liu, EP Fenichel, S Klotz. 2014 Synchronized peak-rate years of global resources use. *Ecology and Society* 19(4): 50.

... of its surprising results and stories behind the data

Václavík, T, S Lautenbach, T Kuemmerle, **R Seppelt**. 2013. Mapping global land system archetypes. *Global Environmental Change*, 23: 1637-1647.

... of all the efforts we spent

Beckmann M, Gerstner K, Akin-Fajiyi M, Ceaşu S, Kambach S, Kinlock NL, Phillips HRP, Verhagen W, Gurevitch J, Klotz S, Newbold T, Verburg PH, Winter M, **Seppelt R**. 2019. Conventional land-use intensification reduces species richness and increases production: A global meta-analysis. *Global Change Biology*, 10.1111/gcb.14606

Schmidt, S, AM Manceur, **R Seppelt** (2016) Uncertainty of Monetary Valued Ecosystem Services – Value Transfer Functions for Global Mapping. *PLoS One* 11(3): e0148524. 10.1371/journal.pone.0148524.

---

**Full list Journal papers (peer reviewed, ISI listed)**


---

**2020**

1. Egli L, Schröter M, Scherber C, Tschardt T, **Seppelt R**. 2020. Crop Asynchrony Stabilizes Food Production. *Nature* 588(7837): E7–12. [10.1038/s41586-020-2965-6](https://doi.org/10.1038/s41586-020-2965-6).
2. Kambach, S., Bruelheide, H., Gerstner, K., Gurevitch, J., Beckmann, M., & Seppelt, R. 2020. Consequences of multiple imputation of missing standard deviations and sample sizes in meta-analysis. *Ecology and Evolution*, 14. [10.1002/ece3.6806](https://doi.org/10.1002/ece3.6806)
3. Schröter M, Crouzat E, Hölting L, Massenbergh J, Rode J, Hanisch M, Kabisch N, ..., **Seppelt R**, et al. 2020. Assumptions in ecosystem service assessments: Increasing transparency for conservation. *Ambio*. [10.1007/s13280-020-01379-9](https://doi.org/10.1007/s13280-020-01379-9)
4. **Seppelt R**, Arndt C, Martin EA, Beckmann M, Hertel TW. 2020. Deciphering the biodiversity-production mutualism in the global food security debate. *Trends In Ecology & Evolution*. [10.1016/j.tree.2020.06.012](https://doi.org/10.1016/j.tree.2020.06.012)
  - On recommended reading list for UN FOOD SYSTEM Summit 2021, <https://sc-fss2021.org/materials/publications-and-reports-of-relevance-for-food-systems-summit/>
5. Ehrmann S, **Seppelt R**, & Meyer, C. 2020. Harmonise and integrate heterogeneous areal data with the R package arealDB. *Environmental Modelling & Software*, 133, 104799.
6. Kehoe L, dos Reis TNP, Meyfroidt P, Bager S, **Seppelt R**, Kuemmerle T, Berenguer E, et al. 2020. Inclusion, Transparency, and Enforcement: How the EU-Mercosur Trade Agreement Fails the Sustainability Test. *One Earth*, S259033222030422X.
7. Chan KMA, Boyd DR, Gould RK, Jetzkowitz J, Liu J, Muraca B, Naidoo R., Olmsted P, Satterfield T, Selomane O, Singh GG, Sumaila R, ... **Seppelt R**, et al. 2020. Levers and leverage points for pathways to sustainability. *People and Nature*. [10.1002/pan3.10124](https://doi.org/10.1002/pan3.10124)
8. Dornelles AZ, Boyd E, Nunes RJ, ... **Seppelt R**, Settele, J, Shackelford N., Standish RJ, Yengoh GT, Oliver TH. 2020. Towards a bridging concept for undesirable resilience in social-ecological systems. *Global Sustainability*, 3, e20. [10.1017/sus.2020.15](https://doi.org/10.1017/sus.2020.15)
9. Müller B, Hoffmann F, Heckeley T, Müller C, ... **Seppelt R**, et al. 2020. Modelling Food Security: Bridging the Gap between the Micro and the Macro Scale. *Global Environmental Change* 63: 102085. [10.1016/j.gloenvcha.2020.102085](https://doi.org/10.1016/j.gloenvcha.2020.102085).
10. Martinez-Garcia R, Fleming CH, **Seppelt R**, Fagan WF, Calabrese JM. 2020. How Range Residency and Long-Range Perception Change Encounter Rates. *Journal of Theoretical Biology*, 110267. [10.1016/j.jtbi.2020.110267](https://doi.org/10.1016/j.jtbi.2020.110267).
11. Cumming GS, Epstein G, Anderies JM, Apetrei CI, Baggio J, ... **Seppelt R**, et al. 2020. Advancing Understanding of Natural Resource Governance: A Post-Ostrom Research Agenda. *Current Opinion in Environmental Sustainability* 44: 26–34. [10.1016/j.cosust.2020.02.005](https://doi.org/10.1016/j.cosust.2020.02.005).
12. Weise H, Auge H, Baessler C, ... **Seppelt R**, ..., Grimm V (2020). Resilience Trinity: Safeguarding Ecosystem Functioning and Services across Three Different Time Horizons and Decision Contexts. *Oikos*, Januar, oik.07213. [10.1111/oik.07213](https://doi.org/10.1111/oik.07213).
  - Editor's Choice

## 2019

13. Wiederkehr C, Schröter M, Adams H, **Seppelt R**, Hermans K (2019) How Does Nature Contribute to Human Mobility? A Conceptual Framework and Qualitative Analysis. *Ecology and Society* 24 (4): 16. [10.5751/ES-11318-240431](https://doi.org/10.5751/ES-11318-240431).
14. Egli L, Weise H, Radechuk V, **Seppelt R**, Grimm V (2019) Exploring Resilience with Agent-Based Models: State of the Art, Knowledge Gaps and Recommendations for Coping with Multidimensionality. *Ecological Complexity* 40: S1476945X18301089. [10.1016/j.ecocom.2018.06.008](https://doi.org/10.1016/j.ecocom.2018.06.008)
15. Strauch M, Cord, AF, Pätzold C, Lautenbach S, Kaim A, Schweitzer C, **Seppelt R**, Volk M. (2019) Constraints in Multi-Objective Optimization of Land Use Allocation – Repair or Penalize? *Environmental Modelling & Software* 118: 241–51.
16. Zabel F, Delzeit R, Schneider JM, **Seppelt R**, Mauser W, Václavík T. (2019) Global Impacts of Future Cropland Expansion and Intensification on Agricultural Markets and Biodiversity. *Nature Communications* 10 (1): 2844.
17. Hagedorn G, Loew T,... **Seppelt R**,... (2019) Scientists for Future: A joint statement by German, Austrian, and Swiss scientists and scholars concerning the protests of young people demanding adequate protection of the climate, biodiversity, forest, oceans, and soil. *GAIA - Ecological Perspectives for Science and Society* 28 (2): 79–87.
  - Selected as best paper of the year
18. Beckmann M, Gerstner K, Akin-Fajiyi M, Ceaşu S, Kambach S, Kinlock NL, Phillips HRP, Verhagen W, Gurevitch J, Klotz S, Newbold T, Verburg PH, Winter M, **Seppelt R**. 2019. Conventional land-use intensification reduces species richness and increases production: A global meta-analysis. *Global Change Biology*, [10.1111/gcb.14606](https://doi.org/10.1111/gcb.14606)
19. Lautenbach, S., ..., **Seppelt, R.**, ... Volk, M. 2019. Blind spots in ecosystem services research and challenges for implementation. *Regional Environmental Change*, 033498. [10.1007/s10113-018-1457-9](https://doi.org/10.1007/s10113-018-1457-9)
20. Kehoe L, Reis T, Virah-Sawmy M, Balmford A, Kuemmerle T & 604 co-signatories. 2019. Make EU Trade with Brazil Sustainable. *Science* 364 (6438): 341.1-341. [10.1126/science.aaw8276](https://doi.org/10.1126/science.aaw8276).

## 2018

21. **Seppelt R**, Beckmann M, Václavík T & Volk M. 2018. The Art of Scientific Performance. *Trends in Ecology & Evolution* [10.1016/j.tree.2018.08.003](https://doi.org/10.1016/j.tree.2018.08.003).
22. **Seppelt R**, Verburg PH, Norström A, Cramer W & Václavík T. 2018. Focus on Cross-Scale Feedbacks in Global Sustainable Land Management. *Environmental Research Letters* 13. [10.1088/1748-9326/aadc45](https://doi.org/10.1088/1748-9326/aadc45). (Editorial)
23. Dominik C, **Seppelt R**, Horgan FG, Settele J, & Václavík T. 2018. Landscape composition, configuration, and trophic interactions shape arthropod communities in rice agroecosystems. *Journal of Applied Ecology*. [10.1111/1365-2664.13226](https://doi.org/10.1111/1365-2664.13226)
24. Settele J, Heong KL, Kühn I, Klotz S, ..., **Seppelt R**. et al. 2018. Rice ecosystem services in South-east Asia. *Paddy and Water Environment*. [10.1007/s10333-018-0656-9](https://doi.org/10.1007/s10333-018-0656-9)
25. Schmidt S, & **Seppelt R**. 2018. Information content of global ecosystem service databases and their suitability for decision advice. *Ecosystem Services* 32: 22–40. [10.1016/j.ecoser.2018.05.007](https://doi.org/10.1016/j.ecoser.2018.05.007)

26. Parker TH, Griffith SC, Bronstein JL, Fidler F, Foster S, Fraser H, Forstmeier W, ..., **Seppelt R**, et al. 2018. Empowering Peer Reviewers with a Checklist to Improve Transparency. *Nature Ecology and Evolution* **2**: 929–35. [10.1038/s41559-018-0545-z](https://doi.org/10.1038/s41559-018-0545-z).
27. Vallet A, Locatelli B, Levrel H, Wunder S, **Seppelt R.**, Scholes RJ, Oszwald J. 2018. Relationships Between Ecosystem Services: Comparing Methods for Assessing Tradeoffs and Synergies. *Ecological Economics* **150**: 96–106. [10.1016/j.ecolecon.2018.04.002](https://doi.org/10.1016/j.ecolecon.2018.04.002).
28. Magliocca NR, Ellis EC, ... **Seppelt R**, Verburg PH. 2018. Closing Global Knowledge Gaps: Producing Generalized Knowledge from Case Studies of Social-Ecological Systems. *Global Environmental Change* **50**: 1–14. [10.1016/j.gloenvcha.2018.03.003](https://doi.org/10.1016/j.gloenvcha.2018.03.003).
29. Rieb JT, Chaplin-Kramer R, ... **Seppelt R**, et al. 2018. Response to Kabisch and Colleagues. *BioScience* **68** (3): 167–68. [10.1093/biosci/bix154](https://doi.org/10.1093/biosci/bix154).
30. Ziv G, Hassall C, Bartkowski B, Cord AF, Kaim A ..., **Seppelt R** ..., Beckmann M. 2018. A Bird's Eye View over Ecosystem Services in Natura 2000 Sites across Europe. *Ecosystem Services*. **30**: 287–298. [10.1016/j.ecoser.2017.08.011](https://doi.org/10.1016/j.ecoser.2017.08.011).

## 2017

31. Cord AF, Bartkowski B, Beckmann M, Dittrich A, Hermans-Neumann K, Kaim A, Lienhoop N, ..., **Seppelt R**, et al. 2017. Towards Systematic Analyses of Ecosystem Service Trade-Offs and Synergies: Main Concepts, Methods and the Road Ahead. *Ecosystem Services* **28**: 264–72. [10.1016/j.ecoser.2017.07.012](https://doi.org/10.1016/j.ecoser.2017.07.012). (Editorial)
32. Andreas D, **Seppelt R**, Václavík T, Cord AF. 2017. Integrating Ecosystem Service Bundles and Socio-Environmental Conditions - A National Scale Analysis from Germany. *Ecosystem Services* **28**: 273–82. [10.1016/j.ecoser.2017.08.007](https://doi.org/10.1016/j.ecoser.2017.08.007).
33. Rosa, IMD, HM Pereira, Simon Ferrier, Rob Alkemade, Lilibeth A Acosta, H. Resit Akcakaya, Eefje den Belder, ..., **Seppelt R**, et al. 2017. Multiscale Scenarios for Nature Futures. *Nature Ecology & Evolution* **1**(10): 1416–19. [10.1038/s41559-017-0273-9](https://doi.org/10.1038/s41559-017-0273-9).
34. Dittrich A, **Seppelt R**, Václavík, T & Cord AF. 2017. Integrating ecosystem service bundles and socio-environmental conditions – A national scale analysis from Germany. *Ecosyst. Serv.* [10.1016/j.ecoser.2017.08.007](https://doi.org/10.1016/j.ecoser.2017.08.007)
35. Rieb JT, Chaplin-Kramer R, ..., **Seppelt R**, et al. 2017. When, Where, and How Nature Matters for Ecosystem Services: Challenges for the Next Generation of Ecosystem Service Models. *Bioscience*. [10.1093/biosci/bix075](https://doi.org/10.1093/biosci/bix075)
36. **Seppelt R**, Beckmann B, Václavík T. 2017. Searching for Win-Win Archetypes in the Food-Biodiversity Challenge: A Response to Fischer et al. *Trends in Ecology & Evolution* **92**(9): 630–632. [10.1016/j.tree.2017.06.015](https://doi.org/10.1016/j.tree.2017.06.015)
37. Christophe D, **Seppelt R**, Horgan FG, Marquez L, Settele J, Václavík T. 2017. Regional-Scale Effects Override the Influence of Fine-Scale Landscape Heterogeneity on Rice Arthropod Communities. *Agriculture, Ecosystems and Environment* **246**: 269–78. [10.1016/j.agee.2017.06.011](https://doi.org/10.1016/j.agee.2017.06.011).
38. Cord AF, Brauman KA, Chaplin-Kramer R, Huth A, Ziv G, **Seppelt R**. 2017. Priorities to Advance Monitoring of Ecosystem Services Using



Earth Observation. *Trends in Ecology & Evolution*.  
[10.1016/j.tree.2017.03.003](https://doi.org/10.1016/j.tree.2017.03.003)

39. Lavorel S, Bayer A, ... **Seppelt R.** *et al.* 2017. Pathways to Bridge the Biophysical Realism Gap in Ecosystem Services Mapping Approaches. *Ecological Indicators* **74**: 241–60.
40. Gerstner K, Moreno-Mateos D, ... **Seppelt R.** 2017. Will your paper be used in a meta-analysis? Make the reach of your research broader and longer lasting. *8*(6):777-784. [10.1111/2041-210X.12758](https://doi.org/10.1111/2041-210X.12758)
41. Carter S, Manceur AM, **Seppelt R**, Hermans-Neumann K, Herold M, & Verchot L. 2017. Large scale land acquisitions and REDD+: a synthesis of conflicts and opportunities. *Environmental Research Letters*. **12**(3), 35010. [10.1088/1748-9326/aa6056](https://doi.org/10.1088/1748-9326/aa6056)
42. Dittrich A, H von Wehrden, ... , **R Seppelt**, & M Beckmann 2017, Mapping and analysing historical indicators of ecosystem services in Germany. *Ecol. Indic.*, **75**: 101-111
43. Knapp S, Schweiger O, ... , **R. Seppelt**, S. Klotz, G. Krause 2017. Do drivers of biodiversity change differ in importance across marine and terrestrial systems – Or is it just different research communities' perspectives? *Science of the Total Environment*. **574**: 191-203

## 2016

44. Hermans-Neumann K., Gerstner, K, G.eijzenborffer, I.R., Herold, M., **Seppelt, R.**, Wunder, S. 2016. Why Do Forest Products Become Less available? A Pan-Tropical Comparison of Drivers of Forest-Resource Degradation. *Environmental Research Letters* **11**(12): 125010.
45. Ziv G., Mullin, K., ... **Seppelt, R.**, Beckmann, M. (2016). Water Quality Is a Poor Predictor of Recreational Hotspots in England. *Plos One*, **11**(11), e0166950.
46. Václavík T, F Langerwisch, ... **R Seppelt**. 2016. Investigating Potential Transferability of Place-Based Research in Land System Science. *Environmental Research Letters* **11**(9): 095002. [10.1088/1748-9326/11/9/095002](https://doi.org/10.1088/1748-9326/11/9/095002) .
47. **Seppelt R.**, GS Cumming. 2016. Humanity's distance to nature: time for environmental austerity? *Landscape Ecology* [10.1007/s10980-016-0423-5](https://doi.org/10.1007/s10980-016-0423-5). (Editorial)
48. Meyer MA, **R Seppelt**, F Witing, JA Priess. 2016. Making Environmental Assessments of Biomass Production Systems Comparable Worldwide. *Environmental Research Letters* **11**(3): 034005. [10.1088/1748-9326/11/3/034005](https://doi.org/10.1088/1748-9326/11/3/034005)
49. Lange M, J Schaber, ... **R Seppelt**, D Doktor. 2016. Simulation of Forest Tree Species' Bud Burst Dates for Different Climate Scenarios: Chilling Requirements and Photo-Period May Limit Bud Burst Advancement. *International Journal of Biometeorology*. **60**(11):1711-1726
50. Schmidt S, AM Manceur, **R Seppelt**. 2016. Uncertainty of Monetary Valued Ecosystem Services – Value Transfer Functions for Global Mapping. *PlosONE* **11**(3): e0148524. [10.1371/journal.pone.0148524](https://doi.org/10.1371/journal.pone.0148524)
51. **Seppelt R**, M Beckmann, ... T Newbold. 2016. Harmonizing Biodiversity Conservation and Productivity in the Context of Increasing Demands on Landscapes. *BioScience*. [10.1093/biosci/biw004](https://doi.org/10.1093/biosci/biw004)

## 2015

52. van Vliet J, NR Magliocca, ... **R Seppelt**, KC Seto, PH Verburg. 2015. Meta-studies in land use science: Current coverage and prospects. *Ambio*. **45**(1):15-28
53. Förster J, J Barkmann, ... **R Seppelt**, J Settele, JH Spangenberg, V Tekken, T Václavík, H Wittmer. 2015. Assessing ecosystem services for informing land-use decisions: a problem-oriented approach. *Ecology and Society* **20**(3):31
54. Cord AF, **Seppelt R** & Turner W. 2015. Sustainable development goals: Monitor ecosystem services from space. *Nature* **525**: 33. (Correspondence)
55. Bennett EM, W Cramer, ... **R Seppelt**, et al. 2015. Linking biodiversity, ecosystem services, and human well-being: three challenges for designing research for sustainability. *Current Opinion in Environmental Sustainability* **14**: 76-85
56. Holzkämper A, T Klein, T, **R Seppelt**, J Fuhrer. 2015. Assessing the propagation of uncertainties in multi-objective optimization for agro-ecosystem adaptation to climate change. *Environmental Modelling and Software* **66**: 27-35
57. Schulze J, Martin R, ... **R Seppelt**. 2015, Design, implementation and test of a serious online game for exploring complex relationships of sustainable land management and human well-being. *Environmental Modelling and Software* **65**: 58-66.
58. **Seppelt R.**, AM Manceur, J Liu, EP Fenichel, S Klotz. 2015. Synchrony of peak-rate years suggests challenges to sustainable development: a response to O'Sullivan (2015). *Ecology and Society* **20**(2): 33. [10.5751/ES-07633-200233](https://doi.org/10.5751/ES-07633-200233)

## 2014

59. **Seppelt R.**, AM Manceur, J Liu, EP Fenichel, S Klotz. 2014. Synchronized peak-rate years of global resources use. *Ecology and Society* **19**(4): 50. [10.5751/ES-07039-190450](https://doi.org/10.5751/ES-07039-190450).
  - Highlighted *Nature*: Sustainability - Resource use peaks worldwide, 2015. *Nature* **517**, 246-247. [10.1038/517246e](https://doi.org/10.1038/517246e)
  - Selected Media responses: UK: *The Independent*, *The Daily Mirror*, *Geographical*. US: *Smithsonian magazine*, *Ensis.com*, Germany: *Der Tagesspiegel*, *ZDF ePlanet*, *Schrot und Korn*. Austria: *ORF*
60. Gerstner K., CF Dormann, A Stein, AM Manceur & **R Seppelt**. 2014. Effects of Land Use on Plant Diversity - A Global Meta-Analysis. *Journal of Applied Ecology* **51**(6): 1690-1700.
  - Highlighted in journal section *Editors Choice* and
  - *2014 Southwood Prize* for the best paper by a young author (K.G.)
61. Von Wehrden H, Abson, DJ, Beckmann M, Cord AF, Klotz S & **Seppelt R.** 2014. Realigning the land-sharing/land-sparing debate to match conservation needs: considering diversity scales and land-use history. *Landscape Ecology*. **29**(6): 941-948
62. Gaddis EJB, Voinov A, **Seppelt R** & Rizzo DM. 2014. Spatial Optimization of Best Management Practices to Attain Water Quality Targets. *Water Resources Management*, **28**: 1485-1499
63. Voinov A., **Seppelt R**, Reis S., Nabel, JEMS. & Shokravi, S. 2014. Values in socio-environmental modelling: Persuasion for action or excuse for inaction. *Environmental Modelling & Software*, **53**: 207-212

## 2013

64. Václavík T, S Lautenbach, T Kuemmerle & **R Seppelt**. 2013. Mapping global land system archetypes. *Global Environmental Change*, **23**: 1637-1647
65. Klein T, A Holzkämper, P Calanca, **R Seppelt** & J Fuhrer. 2013. Adapting agricultural land management to climate change: a regional multi-objective optimization approach. *Landscape Ecology*. **28**(10): 2029-2047
66. Gerstner K, Dormann CF, Václavík T, Kreft H & **Seppelt R**. 2013. Accounting for geographical variation in species-area relationships improves the prediction of plant species richness at the global scale. *Journal of Biogeography*, **41**: 1-13
67. **Seppelt R**, Lautenbach S & Volk M. 2013. Identifying trade-offs between ecosystem services, land use, and biodiversity: a plea for combining scenario analysis and optimization on different spatial scales. *Current Opinion in Environmental Sustainability*, **5**: 458-463
68. Lautenbach S, Volk M, Strauch M, Whittaker G & **Seppelt R**. 2013. Optimization-based trade-off analysis of biodiesel crop production for managing an agricultural catchment. *Environmental Modelling & Software*, **48**: 98-112
69. **Seppelt R**, Bankamp D, Voinov A, Rizzoli A. 2013. 6<sup>th</sup> International Congress on Environmental Modelling and Software (iEMSs): Managing Resources of a Limited Planet: Pathways and Visions under Uncertainty: A congress report. *Environmental Modelling & Software*, **43**, 160-162
70. Bankamp D & **Seppelt R**. 2013. Managing resources of a limited planet Or, how to organise an environmentally friendly congress. *Environmental Modelling & Software*, **46**: 1-5
71. Bennett ND, Croke BFW, ... , **Seppelt R**, Voinov AA, Fath B, Andreassian V. 2013. Characterising performance of environmental models. *Environmental Modelling & Software*, **40**: 1-20
72. Lausch A, Pause M, ... **Seppelt R**. 2013. A new multiscale approach for monitoring vegetation using remote sensing-based indicators in laboratory, field, and landscape. *Environmental Monitoring and Assessment*. **185**(2): 1215-1235

## 2012

73. Burkhard B, de Groot R, Costanza R, **Seppelt R.**, Jørgensen SE, Potschin M. 2012. Solutions for sustaining natural capital and ecosystem services. *Ecological Indicators* **21**: 1-6
74. **Seppelt, R.**, Fath, B., Burkhard, B., Fisher, J.L., Gret-Regamey, A., Lautenbach, S., Pert, P., Hotes, S., Spangenberg, J., Verburg, P.H. & Oudenhoven, A.P.E. Van. 2012. Form follows function? Proposing a blueprint for ecosystem service assessments based on reviews and case studies. *Ecological Indicators*, **21**: 145-154
75. Lautenbach, S., Maes, J., Kattwinkel, M., **Seppelt, R.**, Strauch, M., Scholz, M., Schulz-Zunkel, C., Volk, M., Weinert, J., Dormann, C.F. 2012. Mapping water quality-related ecosystem services: concepts and applications for nitrogen retention and pesticide risk reduction. *International Journal of Biodiversity Science, Ecosystem Services & Management*, **8**(1-2): 25-49
76. Lautenbach, S., **R. Seppelt**, J. Liebscher, C.F. Dormann. 2012. Spatial and temporal trends of global pollination benefit. *PlosONE*. **7**(4):e35954
  - Cited in Greenpeace report "Bees in decline". Greenpeace Research Review JN446 01/2013

- Content, data and graphics use in “Summary for Policy Makers” IPBES Deliverable 2A “Pollination Report”
- 77. Lausch, A., Pause, M., Merbach, I., Gwyllym-Margianto S., Schulz K., Zacharias S., **Seppelt R.** 2012. Scale-specific hyperspectral remote sensing approach in environmental research. *PFG*, **5**: 589-602
- 78. Haase, D., N. Schwarz, M. Strohbach, F. Kroll. & **R. Seppelt.** 2012. Synergies, Trade-offs, and Losses of Ecosystem Services in Urban Regions: An Integrated Multiscale Framework Applied to the Leipzig-Halle Region, Germany. *Ecology and Society*, **17**. o.5751/ES-04853-170322
- 79. Eppink, F.V., A. Werntze, S. Mäs, A. Popp, **R. Seppelt.** 2012. Land Management and Ecosystem Services: How Collaborative Research Programmes Can Support Better Policies, *GALA*, **21**(1): 55-63
- 80. Renner, M., **R. Seppelt** & C. Bernhofer. 2012. Evaluation of water-energy balance frameworks to predict the sensitivity of streamflow to climate change. *Hydrology and Earth System Sciences*, **16**: 1419-1433
- 81. Lauf, S., D. Haase, **R. Seppelt** & N. Schwarz. 2012. Simulating demography and housing demand in an urban region under scenarios of growth and shrinkage. *Environment and Planning B: Planning and Design*, **39**: 229-246
- 82. Eichhorn, M., K. Johst, **R. Seppelt** & M. Drechsler. 2012. Model-Based Estimation of Collision Risks of Predatory Birds with Wind Turbines. *Ecology and Society*, **17**. Doi: 10.5751/ES-04594-170201
- 83. Schwarz, N., D. Kahlenberg, D. Haase, **R. Seppelt.** 2012. ABMLand - A tool for collaborative agent-based model development on urban land use change. *Journal of Artificial Societies and Social Simulation*. **15**(2): 8
- 84. Burkhard, B., Groot, R. de, Costanza, R., **Seppelt, R.**, Jörgensen, S.E. & Potschin, M. (2012) Solutions for sustaining natural capital and ecosystem services. *Ecological Indicators*, **21**, 1-6. (Editorial)

## 2011

- 85. Schwarz, N., S. Lautenbach & **R. Seppelt.** 2011. Exploring indicators for quantifying surface urban heat islands of European cities with MODIS land surface temperatures. *Remote Sensing of Environment*, **115**: 3175-3186
- 86. **Seppelt, R.**, Dormann, C.F., Eppink, F.; Lautenbach, S., Schmidt, S. 2011. A quantitative review of ecosystem service studies: Approaches, shortcomings and the road ahead. *Journal of Applied Ecology*. **48**(3): 630-636
- 87. Van Delden, H., Seppelt, R., White, R., Jakeman A.J. 2011. A methodology for the design and development of integrated models for policy support. *Environmental Modelling and Software*, **26**(3): 266-279
- 88. Lautenbach, S., C. Kugel, A. Lausch, & **R. Seppelt.** 2011. Analysis of historic changes in regional ecosystem service provisioning using land use data. *Ecological Indicators*, **11**: 676-687

## 2010

- 89. Haase, D., S. Lautenbach, **R. Seppelt.** 2010. Modeling and simulating residential mobility in a shrinking city using an agent-based approach. *Environmental Modelling and Software* **25**(10): 1225-1240
- 90. Schwarz, N., D. Haase, **R. Seppelt.** 2010. Omnipresent sprawl? A review of urban simulation models with respect to urban shrinkage. *Environment and Planning B: Planning and Design*, **37**: 265-283

91. Volk, M., S. Lautenbach, H. van Delden, L. T. H. Newham, **R. Seppelt**. 2010. How Can We Make Progress with Decision Support Systems in Landscape and River Basin Management? Lessons Learned from a Comparative Analysis of Four Different Decision Support Systems. *Environmental Management*. **46**: 834-849

## 2009

92. **Seppelt, R.**, F. Müller, B. Schröder, M. Volk. 2009. Challenges of simulating complex environmental systems at the landscape scale: A controversial dialogue between two cups of espresso. *Ecological Modelling*. **220**(24): 3481-3489
93. **Seppelt, R.**, I. Kühn, S. Klotz, S. Kabisch, M. Schlöter, C. Görg, K. Frank, K. Jax, K., H. Auge. 2009. Land Use Options - Strategies and Adaptation to Global Change. *GAI*A. **18**(1): 77-80

## 2008

94. Lautenbach, S., J. Berlekamp, N. Graf, **R. Seppelt**, M. Matthies. 2008. Scenario analysis and management options for sustainable river basin management: Application of the Elbe DSS. *Environmental Modelling and Software*. **24**: 26-43

## 2007

95. Holzkämper, A., **R. Seppelt**. 2007. Evaluating cost-effectiveness of conservation management actions in an agricultural landscape on a regional scale. *Biological Conservation*. **136**: 117-127
96. Holzkämper, A., **R. Seppelt**. 2007. LUPolib – A generic library for optimising land-use patterns and landscape structures. *Environmental Modelling and Software*. **22**: 1801-1804

## 2006

97. **Seppelt, R.**, B. Schröder. 2006. Pattern and processes of dynamic mosaic landscapes. *Ecological Modelling*. **199**(4): 377-378 (Editorial)
98. Schröder, B., **R. Seppelt**. 2006. Analysis of pattern-process-interactions based on landscape models – overview, general concepts, and methodological issues. *Ecological Modelling*. **199**(4): 505-516
99. Holzkämper, A., A. Lausch, **R. Seppelt** (2006) Optimizing landscape configuration to enhance habitat suitability for species with contrasting habitat requirements. *Ecological Modelling*. **198**: 277-292
100. Schulz, K., **R. Seppelt**, E. Zehe, H. J. Vogel, S. Attinger. 2006. Importance of spatial structures in advancing hydrological sciences, *Water Resour. Res.*, **42**: W03S03, doi:10.1029/2005WR004301.
101. **Seppelt, R.**, B. Schröder (2006): Introduction to the Special Issue on “Pattern and processes of dynamic mosaic landscapes” *Ecological Modeling*. **199**: 377-378 (Editorial)

## 2005

102. **Seppelt, R.**, O. Richter. 2005. It was an artefact not the results – A note on system dynamic model development. *Environmental Modelling and Software*. **20**: 1543-1548.
103. Jensen, O. P., **R. Seppelt**, T. J. Miller, L.J. Bauer. 2005. Winter distribution of blue crab *Callinectes sapidus* in Chesapeake Bay: application and cross-validation of a two-stage generalized additive model. *Marine Ecology Series*. **299**: 239-255.

104. **Seppelt, R.** 2005. Simulating invasions in fragmented habitats: theoretical considerations, a simple example and some general implications. *Ecological Complexity*. **2**(3): 219-231
105. Kuhnert, M., A. Voinov, **R. Seppelt**. 2005. Comparing Raster Map Comparison Algorithms for Spatial Modeling and Analysis. *Photogrammetric Engineering & Remote Sensing*. **71**(8): 975-984.

**2004**

106. Richter, O., **R. Seppelt**. 2004. Flow of genetic information through agricultural ecosystems: a generic modelling framework with application to pesticide-resistance weeds and genetically modified crops. *Ecological Modelling*. **171**(1-2): 55-66

**2003**

107. Loos, C., **R. Seppelt**, S. Meier-Bethke, J. Schiemann, O. Richter. 2003. Spatially explicit modelling of transgenic maize pollen dispersal and cross pollination. *Journal for Theoretical Biology*. **225**(2): 241-255
108. Heistermann, M., B. Jene, G. Fent, M. Feyerabend, **R. Seppelt**, O. Richter, R. Kubiak. 2003. Comparing experimental and modelling techniques to identify soil reaction parameters of the herbicide Metsulfuron-methyl. *Pesticide Management Science*. **59**:1276-1290
109. **Seppelt, R.**, A. Voinov. 2003. Optimization Methodology for Landuse Patterns: Evaluation based on Multiscale Habitat Pattern Comparison. *Ecological Modelling*. **168**(3): 217-231.

**2002**

110. Richter, O., **R. Seppelt**. 2002. Modeling spatial spread of genetic information via pollen dispersal: coupling of population dynamics and genetics. *Journal of Plant Diseases and Protection*. **18**: 351-357
111. **Seppelt, R.**, A. Voinov. 2002. Optimization Methodology for Land Use Patterns Using Spatially Explicit Landscape Models. *Ecological Modelling*. **151**(2-3): 125-145
112. Richter, O., **R. Seppelt**, D. Söndgerath. 2002. Computer Modelling. *Encyclopedia for Environmetrics*, **1**:402-411

**2001**

113. **Seppelt, R.** 2001. Hierarchical Dynamic Programming and Applications in Ecosystem Management. *Environmental Modelling and Software* **16**(3): 377-386

**2000**

114. Penzel, L., **R. Seppelt**. 2000. Umweltmanagement bei der Deutschen Bahn AG: unterstützt durch ein UIS. *Umwelt-WirtschaftsForum*, Springer. **8**(4): 27-32
115. **Seppelt, R.** 2000. Regionalised optimum control problems for agroecosystem management. *Ecological Modelling*. **131**(2-3): 121-132

**1999**

116. **Seppelt, R.** 1999. Applications of optimum control theory to agroecosystem modelling. *Ecological Modelling* **121**(2-3), 161-183
117. Thiel, C., **R. Seppelt**, W. Müller-Pietralla & O. Richter. 1999. An Integrated Approach for LCA. Linking LCI, Simulation of Matter Transport and Ecological Impact Assessment. *International Journal of Life Cycle Assessment*. **4**(3), 151-160.

1996

118. Richter, O., **R. Seppelt**. 1996. Quantitative Aspects of Sustainable Agriculture. *Mathematics and Computers in Simulation*, **42**(2-3): 263-269

### Bookchapters (peer reviewed)

---

119. Chan KMA, Agard J, Liu J, de Aguiar APD, Armenteras D, Boedihartono AK, Cheung WWL, Hashimoto S, Hernández Pedraza GC, Hickler T, Jetzkowitz J, Kok M, Murray-Hudson M, O'Farrell P, Satterfield T, Saylor AK, **Seppelt R**, Strassburg B, Xue D, Selomane O, Balint L, Mohamed A (2019) Pathways towards a Sustainable Future. In: *IPBES Global Assessment on Biodiversity and Ecosystem Services*. Chapter 5, 119pp.
120. **Seppelt, R.**, S. Lautenbach. 2010. The Use of Simulation Models and Optimization Techniques in Environmental Management: The Example of Ecosystem Service Trade-Offs. In: P.H. Liotta et al. (Eds.). *Achieving Environmental Security: Ecosystem Services and Human Welfare*. IOS Press, Amsterdam, 167-179.
121. Crout, N., T. Kokkonenb, A.J. Jakeman, J.P. Norton, R. Anderson, H. Assaf, B.F.W. Crokeg, N. Gaber h, J. Gibbonsi, D. Holzworthj, J. Mysiak k, J. Reichl, **R. Seppelt**, T. Wagener, and P. Whitfield. 2008. *Good Modelling Practice*. In Jakeman, A.J., Voinov, A.A., Rizzoli, A.E. and Chen, S.H. (eds). Environmental Modelling, Software and Decision Support: state of the art and new perspectives. Elsevier series on Developments in Integrated Environmental Assessment. Elsevier Ltd
122. Haase, D., **Seppelt, R.**, Haase, A. 2007. Land use impacts of demographic change - lessons from eastern german urban regions. In: Petrosillo, I., Müller, F., Jones, K. B., Zurlini, G., Krauze, K. (Hrsg.): Use of landscape sciences for the assessment of environmental security. NATO Science for Peace and Security Series C: Environmental Security Springer, Berlin, S. 329-344
123. Haase, D., Holzkämper, A., **Seppelt, R.** 2007. Beyond growth? Decline of the urban fabric in Eastern Germany. In: Koomen, E., Stillwell, J., Bakema, A., Scholten, H. J. (Hrsg.): Modelling land-use change. Progress and applications. *GeoJournal Library* **90**: 339-353
124. Lischke, H., Bolliger, J. and **Seppelt, R.** 2006. Dynamic spatio-temporal landscape models. In: F. Kienast, S. Ghosh and O. Wildi (eds.). *A changing world: challenges for landscape research*, Dordrecht: Kluwer Academic Publisher. 283-306.
125. **Seppelt, R.** 2006. Agroecosystem Management. In: J. Pintér (edt.) *Global Optimization: Scientific and Engineering Case Studies*. Springer ISBN 0-387-30408-8
126. **Seppelt, R.**, A. Voinov. 2003. Landscape Optimization: Applications of a Spatial Ecosystem Model. In: R. Costanza & A. Voinov: Spatially Explicit Landscape Simulation Modelling, Chapter 12. Springer, New York. 301-326
127. **Seppelt, R.**, M.-M. Temme. 2001. Hybrid Low Level Petri-Nets in Environmental Modelling – Development Platform and Case Studies. M. Matthies, H. Malchow & J. Kriz (eds.) *Integrative Systems Approaches to Natural and Social Sciences*. Springer, 181-201
128. B. C. Patten, B.D. Fath, J.S. Choi, S. Bastiononi, S. R. Borrett S. Brandt-Williams, M. Debeljak, J. Fonseca, W.E. Grant, D. Karnawati, J. C. Marques, A. Moser, F. Müller, C. Pahl-Wostl, **R. Seppelt**, Y.M. Svirezhev. 2002. Complex Adaptive Hierarchical Systems. In: R.

Costanza & S.E. Jörgensen (Eds.) Understanding and Solving Environmental Problems in the 21<sup>st</sup> Century. Elsevier Science, Oxford. Chapter 3&4. 41-97.

## Reports, non-ISI journal publications

129. **Seppelt, R.** (2018): Biodiversität in der Intensivierungsfalle. *MINT Zirkel, Zeitschrift für Mathematik, Informatik, Naturwissenschaften, Technik*. Klett MINT GmbH, Stuttgart. 7(4):1-2
130. **Seppelt, R.** (2017): Wie kann sich die Welt ernähren. *MINT Zirkel, Zeitschrift für Mathematik, Informatik, Naturwissenschaften, Technik*. Klett MINT GmbH, Stuttgart. 6(1):1-2
131. **Seppelt, R., B. Haerdle** (2016) Ressource Land unter Druck Land und nachwachsende Rohstoffe sind nur begrenzt verfügbar. *Forum Geoökologie* 27(1): 15–19.
132. **Seppelt, R., J. Gurevitch** (in print) Lack of evidence to support firing dead professors from universities. *Journal of Irreproducible Results*. In print
133. **Seppelt, R., A. Bonn** 2014. Modellierung Ökosystemarer Dienstleistungen Ein kleiner, aber wichtiger Beitrag zur Bestimmung nachhaltiger Ressourcennutzung. *Forum Geoökologie* 25(2): 17–21.
134. A. Werntze, F.V. Eppink, S Mäs, A. Popp, **Seppelt, R.** 2013. Landmanagement und Ökosystemdienstleistungen: Wie in Verbundforschungs-Programm integrative Landnutzungsstrategien erarbeitet werden können. *Berichte. Geographie und Landeskunde* 87(3). 277-293. Deutsche Akademie für Landeskunde e.V. & Leibniz-Institut für Länderkunde, Leipzig.
135. J. Settele, I. Kühn, S. Klotz, G. Arida, E. Bergmeier, B. Burkhard, J.V. Bustamante, Dao Thanh Truong, M. Escalada, C. Görg, V. Grescho, Ho Van Chien, K.L. Heong, N. Hirneisen, S. Hotes, R. Jahn, T. Klotzbücher, G. Marion, L. Marquez, A. Marxen, R. Moritz, F. Müller, Nguyen Van Sinh, J. Ott, L. Penev, B. Rodriguez-Labajos, M. Schädler, S. Scheu, **R. Seppelt**, P. Stoev, T. Tschardtke, V. Tekken, K. Thonicke, D. Vetterlein, S. Vidal, S. Villareal, W.W. Weisser, C. Westphal, M. Wiemers, J.H. Spangenberg (2013). Kulturlandschaftsforschung in Südostasien das LEGATO-Projekt. *Berichte. Geographie und Landeskunde* 87(3): 315-323. Deutsche Akademie für Landeskunde e.V. & Leibniz-Institut für Länderkunde, Leipzig.
136. Lautenbach, S., J. Maes, M. Kattwinkel, **R. Seppelt**, M. Strauch, M. Scholz, C. Schulz-Zunkel, M. Volk, J. Weinert and C. F. Dormann (2012) Mapping water quality-related ecosystem services: concepts and applications for nitrogen and pesticides. *International Journal of Biodiversity Science, Ecosystem Services & Management*. 8(1-2), 35-49
137. Weith, T., K. Schulz, N. Gaasch, **R. Seppelt**, A. Werntze, F. Eppink (2010) Integration: Sustainable Land Management. A new German Research Funding Measure. *Local Land & Soil News*. 34/35(2): 21-22.
138. **Seppelt, R., F. Müller, B. Schröder & M. Volk** (2007) Discussing landscape ecology – a dialogue between two espressi. *Colloquium Geographicum* 28: 11-26
139. Mehnert, D., Haase, D., Lausch, A., Auhagen, A., Dormann, C.F., **Seppelt, R.** (2005) Bewertung der Habitateignung von Stadtstrukturen unter besonderer Berücksichtigung von Grün- und Brachflächen am Beispiel der Stadt Leipzig. *Naturschutz und Landschaftsplanung* 2: 54-64.



140. Richter, O., **R. Seppelt**, B. Schraut, K. Aden (2003) A simulation study for the comparison of pesticide degradation under laboratory and field conditions. *Pesticide in Air, Plant, Soil & Water System*. 423-432
141. **Seppelt, R.** (2003) Informatik in der Geoökologie – Notwendiges Werkzeug oder berufliche Perspektive? *Forum der Geoökologie*: 1. 10-14.
142. **Seppelt, R.** (2001) Book Review: Ecotox – Environmental Modelling and Ecotoxicology, *Ecological Engineering*. 18(3): 393–396
143. Heimann, G., K. Spencker, B. Schröder, **R. Seppelt** & L. Penzel (1998) Stadtlandschaft Wolfsburg – ein interdisziplinärer Ansatz zur GIS gestützten Stadtplanung. Wettbewerb Synergie von GIS-Daten, FH Anhalt.
144. **Seppelt, R.** & O. Richter (1996) Nachhaltige Landwirtschaft als Kontrollproblem, *Sustainable Development*, Forum Clausthal, 5:158-166
145. Haffer, Chr. & **R. Seppelt** (1994) Neuronale Netze als Werkzeug zur Qualitätssicherung in der Halbleiterherstellung. *Künstliche Intelligenz*, 1: 42-47
146. Bormann, H., R. Conrad, J. Onigkeit & **R. Seppelt** (1996) Modellanwendung: Simulation des Gebiets-Wasserhaushaltes für das Untersuchungsgebiet Nienwohlde sowie der Stickstoff- und Bestandesdynamik für das Untersuchungsgebiet Neuenkirchen. In: *Landschaftsökologie und Umweltforschung*, 24(1): 268-277.
147. **Seppelt, R.**, M. Flake, F. Stange, T. Citli & R. Sotke (1996) Entwicklung von bestandesdynamischen Modellen zur Simulation standortgerechter Nutzungsstrategien - Feldexperimente, Regionalisierung, Optimierung. *Landschaftsökologie und Umweltforschung*, 24(1): 279-354.
148. **Seppelt, R.** (1995) Mathematische Modelle zur Akzeptanzanalyse am Beispiel des Wertstoffrecyclings. *Mitteilungsblatt der TU Clausthal*, 79: 38-39
149. Haffer, Chr. & **R. Seppelt** (1992) *Klassifikation von TRMC-Meßsignalen mit Hilfe neuronaler Netze*, Bericht HMI-B 505, Hahn-Meitner-Institut, Berlin, 30 Seiten
150. **Seppelt, R.** (1987) Merlin - Ein Mehr-Platinen-Rechner mit 21-Pin-Bus, *Junge Wissenschaft*. 4: 58-61

## Conference Proceedings

151. Lautenbach, S., Volk, M., Strauch, M., Whittaker, G., **Seppelt, R.** (2012): Quantifying trade-offs between bioenergy production, food production, water quality and water quantity aspects in a German case study. In: **Seppelt, R., Voinov, A.A., Lange, S., Bankamp, D.** (eds.) *Managing resources of a limited planet: pathways and visions under uncertainty. Proceedings of the sixth biennial meeting of the International Environmental Modelling and Software Society, Leipzig, Germany, July 1-5, 2012.* 2187 - 2193
152. Lautenbach, S., Voinov, A., **Seppelt, R.** (2006). Localization effects of land use change on hydrological models. In: M. Sánchez-Marrè, J. Béjar, J. Comas, A. E. Rizzoli, G. Guariso (Eds.) *Proceedings of the iEMSs Fourth Biennial Meeting: International Congress on Environmental Modelling and Software (iEMSs 2008)*.
153. Lautenbach, S., Voinov, A., **Seppelt, R.** (2006): Localization effects of land use change on hydrological models. In: Voinov, A., Jakeman, A., Rizzoli, A. (eds.) *iEMSs Third Biennial Meeting "Summit on*

- Environmental Modelling and Software", Burlington, 9.-13.7.2006. International Environmental Modelling and Software Society, Burlington/USA,
154. Lautenbach, S., Voinov, A., **Seppelt, R.** (2006): Localization effects of land use change on hydrological models. iEMSs Third Biennial Meeting "Summit on Environmental Modelling and Software", Burlington, 9.-13.7.2006. International Environmental Modelling and Software Society, Burlington/USA
155. Zacharias, S., Dietrich, P., Vogel, H.J., **Seppelt, R.**, Borchardt, D., Klotz, S., Messner, F., Teutsch, G. (2008): TERENO - Methodical approach for the implementation of a terrestrial observatory for environmental research in Central Germany *ConSoil 2008*, Milano, 3.-6.6.2008. 85 - 89
156. Schaldach, R., **R. Seppelt**, M. Haase, R. Beuerle & G. Barnickel (2000): Einsatz von GIS-basierten Informationssystemen im Ökosystemmanagement am Beispiel von Gewässerentwicklungskonzepten in Baden-Württemberg. In: K. Tochtermann & W.-F. Rieckert (Hrsg.): *Hypermedia in Umweltschutz*. Metropolis. 277-281
157. **Seppelt, R.** & M. Flake (2000): Environmental Information Systems in Corporate Engineering: Case Studies, Limits and Perspectives. In: A.B. Cramers & K. Greve (eds.): *Computer Science for Environmental Protection*. Metropolis. 435-447.
158. **Seppelt, R.**, A. Voinov (2001): Agricultural Landscapes - Spatially explicit optimum management. *Publicationes Instituti Geographici Universitatis Tartuensis*. 92(1). 168-172.
159. Jensen, O., **R. Seppelt** & T. Miller (2003): A two-stage generalized additive model (GAM) for Chesapeake Bay blue crab winter habitat. In *Proceeding of 2003 conference of American Fisheries Society*.
160. Richter, O., S. Meier-Bethke, J. Schiemann & **R. Seppelt** (2003): Mathematical models for gene flow from GM crops in the environment. In: *Verhandlungen der Gesellschaft für Ökologie*, 33
161. **Seppelt, R.** (2002): Avenues of Spatially Explicit Population Dynamics Modeling - A par excellence Example for Mathematical Heterogeneity in Ecological Models? In: *Integrated Assessment and Decision Support*. IDSI, Switzerland. 1:269-274
162. Seifert, T., **R. Seppelt** & S. Schwartz (1998): Schlagwortbasierte Zugänge zu Umweltsimulationsmodellen. H.-D. Haasis & K.C. Ranze (Hrsg.): *Vernetzte Strukturen in Informatik, Umwelt und Wirtschaft*. Metropolis. 489-500.
163. Schwartz, S. & **R. Seppelt** (1998): Vom Umweltdatum zum Management in Ökosystemen. J. Strobl & F. Dollinger (Hrsg.): *Angewandte Geographische Informationsverarbeitung*. Wichmann, 334-343
164. **Seppelt, R.** (1997): Ansätze nachhaltiger Nutzung agrarischer Ökosysteme. A. Kuhn & S. Wenzel (Hrsg.): *Simulationstechnik*, 1997, Verlag Vieweg & Sohn, 333-338
165. Sodtke, R., M. Flake & **R. Seppelt** (1996): Investigation of different Fallow Seeds and its Effects on Plant Growth and Nitrogen Dynamics in Soil and Biomass. In: *Trans. of 9<sup>th</sup> Nitrogen Workshop*, TU Braunschweig
166. **Seppelt, R.** & O. Richter (1995): Sustainable Agriculture as Optimum Control Problem. *Systems Analysis, Modelling, Simulation*, 18(1): 759-762
167. **Seppelt, R.** & O. Richter (1996): Sustainable Agriculture as Optimal Control Problem. *Knowledge tools for a sustainable civilization*. Ryerson Polytechnic University, ISBN 0-7803-3365-9. 62-69

## Policy, Advisory Papers

---

168. Vohland, K., U. Doyle, C. Albert, ..., **R. Seppelt**, D. Thrän, F. Witing (2015) Ökosystemleistungen, Biodiversität und Klimawandel: Grundlagen. In: Volkmar Hartje, Henry Wüstemann und Aletta Bonn (Hrsg.) Naturkapital Deutschland – TEEB DE: Naturkapital und Klimapolitik Synergien und Konflikte. Chp. 3. Pp. 68-98
169. Fangmeier, A., Ordon, F., Schlecht, E., Seppelt, R. & Wolters, V. (2014) Feldversuchsinfrastrukturen – Status quo und Perspektiven Positionspapier der DFG Senatskommission für Agrarökosystemforschung Übersichtsarbeit – Mitteilung. *Journal für Kulturpflanzen*, 66, 237–240.
170. Wolters, V., Isselstein, J., Stützel, H., Ordon, F., Christina von Haaren, E.S., Wesseler, J., Birner, R., Lützw, M. Von, Brüggemann, N., Diekkrüger, B. & Fangmeier, A. (2014) Nachhaltige ressourceneffiziente Erhöhung der Flächenproduktivität: Zukunftsoptionen der deutschen Agrarökosystemforschung Grundsatzpapier der DFG Senatskommission für Agrarökosystemforschung. *Journal für Kulturpflanzen*, 66, 225–236.
171. DFG Senatskommission für Agrarökosystemforschung (2014): *Nachhaltige ressourceneffiziente Erhöhung der Flächenproduktivität: Zukunftsoptionen der deutschen Agrarökosystemforschung. Grundsatzpapier der DFG Senatskommission für Agrarökosystemforschung. Federführung: V. Wolters, J. Isselstein, H. Stützel, F. Ordon, C. von Haaren, E. Schlecht, J. Wesseler, R. Birner, M. v. Lützw, N. Brüggemann, B. Diekkrüger, A. Fangmeier, H. Flessa, H. Kage, M. Kaupenjohann, I. Kögel-Knabner, R. Mosandl, R. Seppelt.* S. 18.
172. DFG Senatskommission für Agrarökosystemforschung (2013): *Feldversuchsinfrastrukturen – Status quo und Perspektiven. Positionspapier der DFG Senatskommission für Agrarökosystemforschung. Federführung: H. Stützel, N. Brüggemann, A. Fangmeier, F. Ordon, E. Schlecht, R. Seppelt, V. Wolters.* S. 5.
173. Hüttl, R., H. Born, W. Eckelmann, H.-G. Frede, R. Fritz, K.-J. Hülsbergen, F. Isermeyer, F. Makeschin, M. Quinckhardt, B. U. Schneider, **R. Seppelt**, F. Vahrenholt & J. von Braun (2010): *Boden, Wasser und Landnutzung – Herausforderungen, Forschungs-, Technologie- und Handlungsbedarf.*
174. Alcamo, J., M. Andrae, M. Akhtar-Schuster, D. ..., **R. Seppelt**, P.-T. Stoll, G. Teutsch, P. Vlek, G. Wefer, W. Weisser, H. von Storch & S. Zacharias (Höll, B., Mauser, W. (Hrsg., 2008): *Global change research in Germany 2008* German National Committee on Global Change Research (NKGCF), München, 45 S.

## Books

---

- Schröter, M., Bonn, A., Klotz, S., **Seppelt, R.** & Baessler, C. (2019) Atlas of Ecosystem Services: Drivers, Risks and Societal Responses. Springer. ISBN 978-3-319-96228-3 [www.springer.com/gb/book/9783319962283](http://www.springer.com/gb/book/9783319962283)
- M. Berning, J. Schmidt, P. Scholz (2016): *Das Online Spiel LandYOUs. Unterrichtsimpuls zur Bildung für Nachhaltige Entwicklung.* [www.landyou.org](http://www.landyou.org) Klett MINT GmbH, Stuttgart.
- **R. Seppelt**, A.A. Voinov, S. Lange, D. Bankamp (Eds.) (2012): International Environmental Modelling and Software Society (iEMSs) 2012 International Congress on Environmental Modelling and Software.

- Managing Resources of a Limited Planet: Pathways and Visions under Uncertainty. Sixth Biennial Meeting, Leipzig, Germany. ISBN: 978-88-9035-742-8 <http://www.iemss.org/society/index.php/iemss-2012-proceedings>.
- **R. Seppelt** (2003) Computer-based Environmental Management, 304 pp. VCH-Wiley, Weinheim, New York. 2003. ISBN: 352730732X
 

“This is a well-written and understandable book.... The author is to be commended on his effort.” *Energy Sources*, 2004

"This book is a giant step forward in describing the development and use of environmental models..." *Journal of Hazardous Materials*, **108**, 2004

"Die Publikation [...] bietet eine fundierte, reich mit Beispielen illustrierte Grundlage für theoretische und praktische Aspekte der Umweltmodellierung, indem es mathematische Methoden mit Themen aus Umweltforschung und Ökologie zusammenbringt und so Lösungsansätze zu aktuellen Herausforderungen im Umweltmanagement vorstellt. Neueste Entwicklungen in der Umweltmodellierung sind übersichtlich dargestellt." (Schweizerische Zeitschrift für Forstwesen, 5/04)

“...the book is unique in its comprehensive integration of the theory and practice of environmental modeling and management” *Environ Sci & Pollut Res* **12**(1), 55, 2005
  - M. Flake, **R. Seppelt** & D. Söndgerath (Hrsg) (1999): Umweltsystemanalyse - Dynamik natürlicher und anthropogener Systeme und ihre Wechselwirkungen, Tagungsband GeoöKon'99. In: *Landschaftsökologie und Umweltforschung* **32**, 382pp
  - **R. Seppelt** (1997): Strategien für eine nachhaltige Landwirtschaft. Anwendung der Kontrolltheorie auf langfristige bioökonomische Prozesse. In: *Landschaftsökologie und Umweltforschung* **26**, 130 Seiten

### *Press releases and media activities*

---

#### 2019

- „Die Arten dieser Erde sichern unser Überleben“ Interview for German Weekly Newspaper Die ZEIT <https://www.zeit.de/wissen/umwelt/2019-05/artensterben-raff-seppelt-biodiversitaet-artenschutz-oekosysteme-ipbes>

#### 2018

- „Welternährungstag“ Interview for German Radio Station WDR 5 „Morgenecho“ (16.10.2018, 06:05-09:45) [Audio-Track](#)
- „Nachwachsende Ressourcen unserer Landschaften“. Presentation at ScienceNotes, Astra, Berlin [Video](#)

#### 2016

- *Making Sense of Research: Research for Practical Application in Land Management*: Application-focused book with the findings of international research on sustainable land management presented at the global Convention on Biological Diversity (CBD). UFZ press release 05.12.2016
- *Zocken, um Nachhaltigkeit zu verstehen*: Mit einem Online-Spiel können Lehrer Schülern erklären, worauf es bei nachhaltiger Landnutzung ankommt (only german). UFZ press release 17.10.2016
- *Land under pressure* Final conference of the 7 year research programme "Sustainable Land Management": UFZ press release 3.3.2016

- „Es geht darum Nahrung gerecht zu verteilen und Verluste zu reduzieren“ Interview aus Anlass des Welternährungstages (in German), UP press department 16.10.2016
- "Geht da noch mehr? Landschaftsökologie: Die Grenzen des Wachstums" Interview detektor.fm 16.10.2016 [Audio-Podcast](#)

## 2015

- Holger Klein: *Landschaft und Ökologie, Biodiversität, Subsistenzlandwirtschaft, Migration, demografischer Wandel, u.v.a.m. Interview mit Prof. Ralf Seppelt.* Helmholtz Podcast „Resonator“ [Audio-Podcast](#)
- “Renewable resources reach their limits”. Humanity should use planetary resources with care. UFZ press release 14.1.2015

## 2013

- *Global map provides new insights into land use* UFZ researchers show the complexity of land use by mapping its common patterns. UFZ press release 5.11.2013
- *Carbiocial – Neue Strategien für Südamazonien* Ergebnisse auf der Statuskonferenz „Nachhaltiges Landmanagement“ vorgestellt. UFZ press release 17.4.2013

## 2012

- *Streithema Biokraftstoffe.* Deutsche Welle Fernsehen, Interview, [Video](#)

### Conference- und Workshoporganization

---

## 2017

- UNCCD Conference COP13, Side Event: Presentation and Panel Discussion on “Sustainable Land Management.”

## 2016

- UN CBD Conference COP13 Rio Conventions Pavillion. Session and presentation on “Quantifying the effects of agricultural intensification on productivity and biodiversity”
- Final and concluding conference of the BMBF Research Programm “Sustainable Landmanagement”, Berlin 17.-19.4.2013, 340 participants, see press release
- “Integrating findings from place-based research on land use and social-ecological dynamics across scales“ Session at GLP Open Science Conference 24-27 October 2016, Beijing, China.

## 2014 2016

- Series of Workshops on SESYNC project “Land Use BioDiversity Ecosystem Services trade-offs (LUBDES)”. This SESYNC funded conducts conceptual and data driven synthesis that acknowledges the multidimensional complexity captured in the label ‘land use’ in relation to biodiversity and ecosystem services. It is organized by a series of 6 workshops at SESYNC Annapolis, UFZ Leipzig and sDiv Leipzig.

## 2014

- Session/Workshop “Maintaining ecosystem functions and services under global change: identification of trade-offs in multifunctional landscapes

with modern analysis tools” at GLP Open Science Meeting, Berlin 19.-21.3 2014

- Session/Workshop “Place-based analysis of land-use systems: approaches for synthesis across multiple scales” at GLP Open Science Meeting, Berlin 19.-21.3 2014

### 2013

- Status conference of the BMBF Research Programm on “Sustainable Landmanagement”, Hotel Maritim, Berlin 17.-19.4.2013, 540 participants
- Session/Workshop “Frameworks for structuring and synthesising ecosystem service assessments“ at 6th ESP conference, 26-30 August, Bali, Indonesia

### 2012

- 6<sup>th</sup> International Congress on Environmental Modelling and Software. *Managing Resources of a limited planet: Pathways and Visions under uncertainty*. 1.-5. July 2012, congress centre KUBUS Leipzig, Germany. 430 participants <http://www.iemss.org/sites/iemss2012/>
  - Bankamp, D. & Seppelt, R. 2013. Managing resources of a limited planet – Or, how to organise an environmentally friendly congress. *Environmental Modelling & Software*, **46**: 299–303.
  - Seppelt, R., Bankamp, D., Voinov, A., Rizzoli, A. 2013. 6th International Congress on Environmental Modelling and Software (iEMSS): “Managing Resources of a Limited Planet: Pathways and Visions under Uncertainty”: A congress report. *Environmental Modelling & Software*, **43**: 160–162.
- Symposium on *Integrated modelling for ecosystem services* at 4<sup>th</sup> International Summit on Ecological Sustainability ECOSUMMIT 30.9-5.10.2012 Columbus, Ohio, USA

### 2010

- *The Emperor’s clothes? Addressing consistency in ecosystem service studies*. F. Eppink, R. Seppelt. Workshop at ACES Conference Phoenix Arizona, 6.-9. Dec. 2010
- *Ecosystem services concept for environmental management*, R. Seppelt, M. Volk and Ann van Griensven Symposium at biannual Conference of the Society for Environmental Modelling and Simulation. Ottawa, Canada, 5.-8. July 2010

### 2006

- *Beyond growth? Integrated models, simulations and scenarios of the future shape urban-rural regions*. D. Haase, R. Seppelt. Symposium at biannual Conference of the Society for Environmental Modelling and Simulation. 10.-13.7.2006, Burlington, Vermont

### 2004

- *Spatially explicit integrated modelling of dynamic mosaic landscapes*. B. Schröder, R. Biedermann, R. Seppelt, Symposium at the annual conference of the German Society for Ecology. Sep. 13.-17, Giessen, Germany
- *Landscape Patterns: Simulating Changes, Identifying Driving Forces and Calibrating Models* Symposium at biannual Conference of the Society for Environmental Modelling and Simulation. 14.-18.6.2004 in Osnabrück

## 2003

- *Spatially Explicit Models Linking Abiotic and Biotic Processes at the Landscape* R. Seppelt, B. Schröder. Symposium at the annual conference of the German Society for Ecology 8.9-11.9.2003 in Halle

## 2002

- Joined conference of German Society for Chemistry, Society of Environmental Toxicology and Chemistry and German Geoecological Society (4.-6. October 2002) „Umweltchemie und Ökotoxikologie - Forschung und Entwicklung im Dienste des Umwelt- und Verbraucherschutzes“.
- Ausstellung „Tage der Forschung 2002“ und im Rahmen des Jahres der Geowissenschaften (Titel „Blickpunkt Erde“).

## 1999

- Jahrestagung des Verbandes für Geoökologie „GeoÖkon’99“ (14.-16. Oktober 1999) unter dem Motto „Umweltsystemanalyse: Dynamik natürlicher und anthropogener Systeme und ihrer Wechselbeziehungen“.

---

**Invited Lectures (host payed expenses \*)**


---

## 2018

- *Peak rate years of global resource use: Implication to land use, biodiversity and major agricultural production trends.* DG AgriResearch conference *Innovating for the future of farming and rural communities*, 2./3. Mai Bruxelles
- *Understanding global scale land use pattern for reconciling biodiversity conservation and agricultural production.* International Symposium on Integrative Modelling in Sustainability Systems Research, Kassel, 17./18. May 2018
- *Reconciling food security and biodiversity conservation: Understanding a mutual relationship.* Seminar Series, University Würzburg.

## 2017

- *Reconciling food security and biodiversity conservation: Understanding a mutual relationship*, Seminar Series University Hohenheim 16. Mai.
- *Understanding global scale land use pattern for reconciling biodiversity conservation and agricultural production.* Seminar Series AGROSCOPE, Reckenholz, Swiss, 11. Mai 2017
- *Conceptualizing and understanding global scale land use pattern for reconciling biodiversity conservation and agricultural production.* Seminar Series, University Southampton. 25. Jan 2017

## 2016

- *Conceptualizing and understanding global scale land use patterns for reconciling biodiversity conservation and agricultural production.* TheSYS Lecture series, Humboldt University Berlin Symposium, Berlin, 14.1.2016,

---

\* Regular conference presentations or posters are not listed.

## 2015

- *Next Generation Models for Ecosystem Services and Biodiversity*. Workshop organized by Synthesis Centre of German Centre on integrative Biodiversity Research (iDiv, sDic), PI Elena Benette, Gretchen Daily.
- *Global Knowledge Gaps*, Workshop by Socio-Environmental Synthesis Centre, NSF PI Erle Ellis.
- *Agricultural production and biodiversity: A global perspective*. Gesellschaft für Pflanzenbauwissenschaften e. V. :Multifunktionale Agrarlandschaften Pflanzenbaulicher Anspruch, Biodiversität, Ökosystemdienstleistungen, 22.-24. September 2015, Technischen Universität in Braunschweig

## 2014

- Stockholm Resilience Centre: *A resource economics view to planetary boundaries*, Sept 2014, on invitation by Prof. Carl Folke.
- Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany: *Renewable resources: Distribution, Use and Limitations*, Nov. 2014, on invitation by Prof. Armin Grunwald
- UFZ annual reception, Nov. 17th: *Land – A limited resource*

## 2013

- UNCCD Conference, Bonn, Germany: *Sustainable Land management: A solution oriented funding measure*, April 2013
- Conference of the Environmental protection Agency Germany (UBA): *Nachhaltige Landnutzung – Wie regional-skalige Forschungsprojekte Antworten auf globale Fragen geben können*, Dec. 2013

## 2012

- 4th Annual Meeting of the SGA Network, Stellenbosch, SA: *Scientific Coordination and Synthesis of the funding activity 'sustainable land management'*, Nov. 2012
- GEO BON Biodiversity observation Network, Working Group 6 Meeting, Paris *Some thoughts on ecosystem service based environmental management: Models, Tools, Examples & Applications*, March 2012
- Kolloquium Frankfurter Geographische Gesellschaft: *Land - eine limitierte Ressource? Oder: Was Landnutzung in Brasilien mit Konsummustern in Mitteleuropa zu tun hat.*

## 2010

- Woods Institute, Stanford University: *Some thoughts on ecosystem service based environmental management: Models, Tools, Examples & Applications*. Dec. 2010
- Kolloquium Universität Marburg, Germany: *Ökosystemare Dienstleistungen – eine wissenschaftliche Erfolgsgeschichte?* April 18th
- Martin-Luther Universität Halle-Wittenberg. Vorlesungsreihe “Die Vielfalt der Arten”: *Wieviel Fläche braucht die Biodiversität? Viele Fragen und einige Antworten.*
- Ecosystem Service Conference, Kiel, Kohren-Salis, Germany: *Keynote Lecture Quantification, Modelling and Valuing of Ecosystem Services: Some thoughts on the perspectives of the concept*. June 2010



## 2009

- Keynote Lecture *Managing Landscapes for Ecosystem Service Provisioning*. Bratislava, Slovenia, June 2009
- Keynote Lecture. Expert Panel at Naturschutzbund Deutschland e.V. (NABU) *Ökosystemare Dienstleistungen: Eine wissenschaftliche Erfolgsgeschichte?* Nov 2009
- Guest Lecture at Potsdam University *Modelling and Simulating Ecosystem Services – What so smart about?* Nov. 2009
- Lecture at the Kiel Institute for the World Economy, Kiel, Germany *How much space is needed for biodiversity?* Nov. 2009
- Keynote Lecture *Modelling and Simulating Ecosystem Services! What's so smart about?* NATO Advanced Reseracher Workshop, Pell Center, Salve Regina University, Newport Rhode Island, USA. July 6-10.

## 2008

- *Modelling Strategies for Environmental Management*. Lecture at USGS, Reston Virginia

## 2007

- Chinese Academy of Science, Institute for Geography and Remote Sensing Research, Beijing, *Integrative modeling of environmental systems, or: How can we manage our environment?* Invitation by Prof. Tianxiang Yue.
- Chinese Agricultural University *The Helmholtz-Centre for Environmental Research – Overview and spotting on the Department for Computational landscape Ecology*.

## 2006

- Joint Indo-German Research Workshop: Will competition for land and water hinder energy development in India? National Institute of Advanced Studies, Indian Institute of Science Campus (NIAS), Bangalore. *Modeling methods for assessing local/regional impacts of energy development on water and land resources*. March 7-8, 2006, Bagalore, Indien, Invitation by NIAS

## 2005

- CCMS Pilot Study Meeting at Veliko Turnovo (Bulgaria), September 4-8, *On the use of Landscape Modelling: Selected Studies on Modelling Anthroposphere Biosphere Interaction*
- Lecture at Swiss Federal Institute of Technology (ETH): *Integrative modeling of environmental systems, or: How can we manage our environment?*
- Lecture at Eidg. Forschungsanstalt für Wald, Schnee und Landschaft (WSL) Zurich: *Integrative modeling of environmental systems, or: How can we manage our environment?*

## 2004

- University Kassel. *Ja mach' nur einen Plan - Über Möglichkeiten, Anwendungen und Perspektiven landschaftsökologischer Modelle*. Nov. 2004
- University Kiel, Ecosystem Research Center. *Agrarlandschaftsmanagement - Modellierung, Simulation, Regionalisierung und Optimierung*.

## 2003

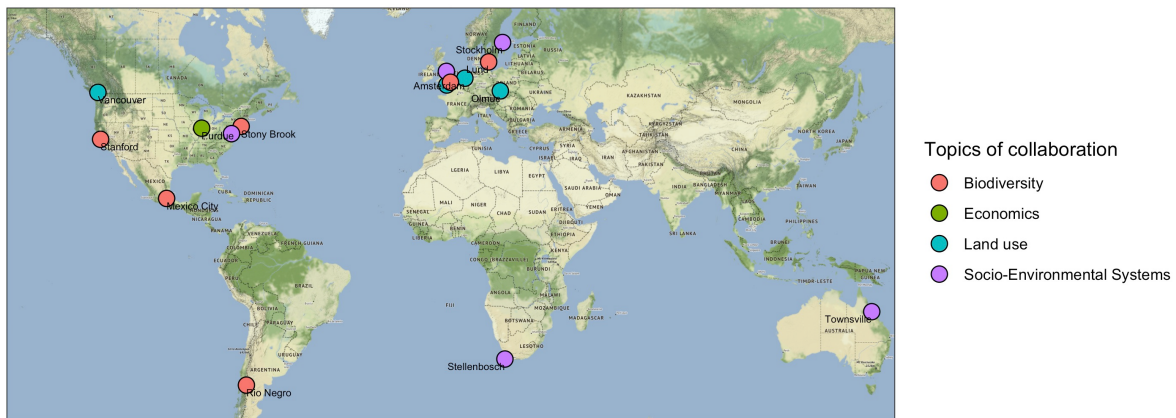
- Annual Meeting ASA-CSSA-SSSA, Denver, Colorado, USA, Changing Sciences for a Changing World: Building a Broader Vision. Invited talk: *Optimization of Farm Management using non-linear Agroecosystem models: Methods, Applications and Perspectives*, November 2003
- University Canberra, Australien und CSIRO Australia: *Environmental modelling and management: Case studies and applications of optimisation techniques*, July 2003

## 2001

- Lecture at Inst. of Computer Science TU München. *Modellierung und Simulation geökologischer Prozesse*. Dec. 2001
- Lecture at Institute for Physical Geography, TU Frankfurt: *Modelle, Simulation und Geographische Informationssysteme – Grundlagen geökologischer Forschung und Lehre*.

## RESEARCH PROJECTS (3<sup>RD</sup> PARTY FUNDING)

### Major Collaborations



#### Biodiversity Ecosystem functioning

- Lucas Garibaldi, Universidad Nacional de Río Negro, Argentina;
- Michael Schmidt, CONABIO, Mexico;
- Jessica Gurevitch, Stony Brooks Univ., USA;
- Gretchen Daily, Woods Inst., Univ. Stanford, USA,
- Tim Newbold Univ. College London, UK

#### Socio-Environmental Systems

- Orjan Bodin, Stockholm Resilience Centre, Sweden;
- Graeme Cumming, James Cook University, Australia;
- Reinette Biggs, Univ. South Africa;
- Guy Ziv, University of Leeds, UK;
- Jonathan Cramer, Margareth Palmer, Univ. Maryland, SESYNC, USA

#### Economics

- Thomas Hertel, Purdue Univ., USA

#### Land use and resource appropriation

- Claire Kremen, Navin Ramankutty, Univ. of British Columbia, Canada; Tomas Václavík, Univ. Olmuc, Czech Rep.;
- Peter Verburg, Vrije Universiteit Amsterdam, Netherlands;
- Felix Eigenbrot, Univ. Southampton, UK

### List of 3<sup>rd</sup> party funded projects

2016 2020	MigSoKo	Germany Ministry of Resarch and Education (BMBF)	1.400.000 €
-----------	---------	--	-------------

The junior research group headed by Dr. Kathleen Hermans (under my supervision), aims to understand the causalities between environmental change and human migration in the tropics. In recent decades, millions people worldwide are estimated to have migrated due to environmental change. The close relationships between environmental factors and political, economic, and social factors driving migration make it challenging to understand the role of the environment in migration processes. Environmental pressure supports out-migration, whereas in-migration may affect the landscape at the migrant's

destination due to a possible overexploitation of local natural resources. The aim of MigSoKo is to: (1) Identify and explain spatial patterns of migration and environmental change, and (2) Explore the causality between environmental change, population pressure, human migration, and environmental consequences of migration for drylands: a biome where both significant environmental changes and migration have been observed. The group takes a global view and also conducts case study work in Ethiopia.

**2013 2017**    **ECOPOTENTIALS**    **EU H2020**    **150.000 €**

ECOPOTENTIALS (Improving improving future ecosystem benefits through earth observations) is a large European-funded H2020 project that focuses its activities on a targeted set of internationally recognised protected areas, blending Earth Observations from remote sensing and field measurements, data analysis and modelling of current and future ecosystem conditions and ecosystem services. ECOPOTENTIALS considers cross-scale geosphere-biosphere interactions at regional to continental scales, addressing long-term and large-scale environmental and ecological challenges.

**2009 2017**    **GLUES**    **Germany Ministry of**    **4.400.000 €**  
[www.ufz.de/glues](http://www.ufz.de/glues)    **Research and Education**  
 (BMBF)

The research programme Sustainable Land management is being coordinated by the scientific coordination and synthesis project GLUES (Global Assessment of Land Use Dynamics, Greenhouse Gas Emissions and Ecosystem Services). The objective of the consortium aims at an overarching coordination of international cross-sectoral activities of 12 international research project, and comprises the support through various communication measures and a synthesis of results generated within the programme. A network among science and stakeholders will be initiated and a common data platform, consistent global land use scenarios support the work. Synthesis is done by an analysis of global and regional findings on land use management related to ecosystem services and green house gas emissions.

**2012 2016**    **iDiv (FZT 118)**    **German Science**  
**Foundation (DFG)**

The German Centre of integrative Biodiversity Research (iDiv) was set up back in 2012 aiming at recording biological diversity in its complexity, making available and using scientific data on a global level, and developing strategies, solutions and utilization concepts for decision-makers in order to prevent any further loss of biodiversity. For the research area *Biodiversity Conservation - safeguarding ecosystem functions and services*, I was founding PI for the 1<sup>st</sup> funding period. iDiv was very successfully evaluated in 2016 and now continues for the 2<sup>nd</sup> period (2017-2020). PI's for the second period were recruited from the professors appointed in the 1<sup>st</sup> phase.

**2012 2017**    **OPERAs**    **EU FP 7**    **150.000 €**

OPERAs (Operational Potential of Ecosystem Research Applications) is an European research project which aims to bridge the gap between ecosystem science and practice. The project is focused on ecosystem services and natural capital science and on enabling stakeholders to apply these concepts in practice.

- |  |                  |   |                     |
|--|------------------|---|---------------------|
| <b>2014 2015</b>   | <b>LUBDES</b>    | <b>SESYNC, NSF</b>  | <b>Travel Grant</b> |
| This SESYNC funded project LUBDES seeks for conceptual and data driven synthesis that acknowledges the multidimensional complexity captured in the label 'land use' in relation to biodiversity and ecosystem services. Other involved partners include Peter Verburg, Gretchen Daily and Matt Walpole.  |                  |   |                     |
| <b>2011 2016</b>   | <b>DELITZSCH</b> | <b>Germany Ministry of Research and Education (BMBF)</b>                | <b>560.000 €</b>    |
| Energy-efficient Delitzsch: The pathway of a city to energy-efficiency under conditions of population shrinkage.   |                  |   |                     |
| <b>2009 2019</b>   | <b>ESCALATE</b>  | <b>Helmholtz Association</b>  | <b>600.000 €</b>    |
| <a href="http://www.ufz.de/escalate">www.ufz.de/escalate</a>   |                  |   |                     |
| Helmholtz Research School for Ecosystem Services under Changing Land-use and Climate (ESCALATE): Our main goal is educate a new generation of young scientists in interdisciplinary ecosystem service research by bringing together an experienced and multidisciplinary team for doctoral education, integrating the UFZ with excellent external partners. ESCALATE provides harmonized education in theoretical principles of all involved disciplines, enabling interdisciplinary thinking and research on ecosystem services.  |                  |   |                     |
| <b>2013 2015</b>   | <b>CONABIO</b>   | <b>National Commission for Knowledge and Use of Biodiversity Mexico</b> | <b>34.000 €</b>     |
| Improving species distribution models of endangered plants (Orchidaceae, Pinaceae, Cupressaceae, Taxaceae, Podocarpaceae) in Mexico by utilizing remote sensing data and spatial measures of model uncertainty   |                  |   |                     |
| <b>2012 2015</b>   | <b>CONNECT</b>   | <b>Germany Ministry of Research and Education (BMBF) / BiodivERsA</b>   | <b>420.000 €</b>    |
| Linking biodiversity CONservatioN and ecosystem services: advancing insights in tradeoffs and synergies between biodiversity, EcosysTem functioning and ecosystem service values for improved integrated biodiversity policy   |                  |   |                     |
| <b>2008 2009</b>   | <b>POLATE</b>    | <b>Germany Ministry of Research and Education (BMBF) / BiodivERsA</b>   | <b>532.510 €</b>    |
| Synthesis and review study to assess research needs for a better understanding of land use and land management effects on biogeochemical cycle to achieve climar mitigation potentials.  |                  |   |                     |
| <b>2007 2010</b>   | <b>PLUREL</b>    | <b>EU FP6</b>   | <b>700.000 €</b>    |
| Peri-urban land use relationships Strategies and Sustainability Assessment Tools for urban-rural linkages. PLUREL will develop new strategies and innovative planning and forecasting tools that are essential for developing sustainable urban-rural land use relationships. These strategies and tools, generic in nature, will support the analysis of urbanisation trends in the EU so that ways can be identified to support this process and minimise their negative impacts, and improve the quality of life of the urban population. PLUREL will evaluate costs for the implementation of these strategies, and aid stakeholders |                  |   |                     |

to better understand, plan and forecast the interactions between urban, peri-urban and rural areas.

**2006 2011 3ZM-Grimex Germany Ministry of Research and Education (BMBF) 300.000 €**

Development of a coupled model for integrated flood risk management of surface and groundwater flow in urban areas

**2005 2006 AmLaTUR DAAD 10.000 €**

The goals of the projects that are supported by this cooperation between the Centre for Environmental Research (UFZ) and the Gund Institute of Ecological Economics (GIEE) are two-fold. (1) Integrate models for simulating land use change with the associated land consumption and land surfacing, growing traffic density as well as flows of matter through the landscape, and the assess ecosystem services provided by the dynamically changing landscape; (2) Use this model system within an optimization framework to estimate, assess and compare different strategies of landscape management.

**2002 2003 DAAD 10.000 €**

Cooperation with Central Biological Laboratory des University of Maryland Centers for Environmental Sciences. Projekt „A GIS based habitat suitability model for Chesapeake Bay blue crab“.

**2000 SE 769-1/1 DFG 15.000 €**

Application of numerical algorithms of control theory for regional agro-ecological Models with respect to nutrient and pesticide dynamics. Cooperation with Prof. Dr. Robert Costanza, Maryland, Institute for Ecological Economics, University of Maryland, USA.

## TEACHING

---

Mentoring Summary (2004-2020)	male/female
Directly mentoring Ph.D. students (1 <sup>st</sup> reviewer)	8/6
Member in committee of Ph.D. students (2 <sup>nd</sup> reviewer)	5/7
Mentoring postdocs (3-year appointments or longer)	11/6
- From those appointed to professorships	4/3
Committee member of professorship appointments	6

## Credo

---

I always aim at teaching students to be independent, critical and creative thinkers. This especially means, not be afraid of making mistakes but being open to and to learn through scientific discussions. In all my lectures, seminars and courses, I teach that data gathering in the field, conceptual as well as mathematical modelling and numerical/statistical analysis is part of the whole picture of environmental research. I aim at motivating students by providing a challenging, problem driven research question within each lecture. In my courses I always embed the most up-to-date research and methods even in undergraduate courses, as this is key to get students excited at scientific progress and innovation. This enables us to assess scientific progress to teach interdisciplinary work.

Due to limited teaching obligations, I teach classes in sustainability science and environmental resource management mainly in master programs, while having experiences in undergraduate (B.Sc.) programs.

I have in-depth experience in organizing and implementing structured Ph.D. programs in environmental science, such as the graduate school ESCALATE at UFZ, Martin-Luther University and University Leipzig as well as the graduate school of the German Centre of integrative Biodiversity Research (yDiv), which I'm a funding member. In this environment we developed and implemented the concept of **Ph.D. synthesis workshops**, in which we teach the Ph.D. hands-on interdisciplinary group work with in synthesis project of limited extend, including writing and submitting a joint manuscript, see Ziv *et al.* (2018, 2016), Dittrich *et al.* (2017)

## Lectures (including practical exercises)

---

### Graduates (Martin-Luther University Halle-Wittenberg annually since 2004)

- *Introduction in Environmental Modelling*: Lecture and practical exercise with modelling tools and focus on agro-ecosystem and hydrological Systems. (5 ECTS)

### Undergraduates (Technical University Braunschweig, annually till 2004)

- *Introduction to computer science* (2 ECTS)
- *Geographic information systems (GIS)* (4 ECTS)
- *Practical Introduction to programming languages (C, Mathematica)* (2 ECTS)
- *Numeric of complex environmental simulation models*: Lecture and practical exercise (3 ECTS)

## Seminars (including practical exercise)

---

### Graduates (Martin-Luther University Halle-Wittenberg)

- *Applications of Ecosystem Modelling*: Practical exercise and seminar lecture based on recently published journal papers (2 ECTS)
- *The Stern Report*: A critical review (2 ECTS)
- *The Millennium Ecosystem Assessment*: A critical review (2 ECTS)

## THESIS SUPERVISION

### Professorship appointies of colleagues under my supervision

---

- Prof. Dr. Anna Cord. Affiliation from 2019 onwards: *Professur für Modellierung in der Landschaftsökologie*, TU Dresden
- Dr. Nina Schwarz. Affiliation from 2016 onwards: *Assistant professor in the faculty of Geo-Information Science and Earth Observation (ITC)* of the University of Twente, The Netherlands.
- Prof. Dr. Sven Lautenbach. *Affiliation from 2012: Assistant Professor for Landuse Modelling and Ecosystem Services*, Rheinische Friedrich-Wilhelms-University of Bonn, Institute for Geodesy and Geoinformation Bonn, Germany
- Prof. Dr. Dagmar Haase. Affiliation from 2009 onwards: *Professor for Landscape Ecology*, Department of Geography, Humboldt University Berlin, Berlin, Germany
- Prof. Dr. Carsten Dormann (2002-2011): *Present affiliation: Albert-Ludwigs-Universität Freiburg*, Department of Forest Biometry, Freiburg, Germany

### Habilitationen

---

- Dagmar Haase (2009): *Dynamics of urban regions. From theory-driven data analysis to quantitative models*. Martin-Luther University Halle-Wittenberg.
- Martin Volk (2009): *Scale appropriate analysis, assessment and management of landscape water and matter dynamics*. Martin-Luther University Halle-Wittenberg.

### Supervised Postdocs

---

- Justin Calabrese, Ph.D. (2005-2007) *Present affiliation: Research Ecologist*, Smithsonian Conservation Biology Institute, USA
- Ameer M. Manceur, Ph.D. (2012-2014) *Present affiliation: Caprion*, Montreal, Canada
- Dr. Florian Eppink (2008-2011): *Present affiliation: Landcare Research* Maanaki Whenua, Governance and Policy Team, Auckland, New Zealand

### Ph.D. thesis/Doctorate degree

---

#### Theses completed

- Christophe Dominik (2012-2018): *The effects of surrounding landscapes on the biocontrol-production function in rice dominated agroecosystems*. Martin-Luther University Halle-Wittenberg.
- Lukas Egli (2021): *Stabelazing agricultural system through diversity*. University Potsdam, co-supervised with Prof. Dr. Volker Grimm
- Veronika Liebelt (2012-2019): *Explaining pattern of urban green, housing prices and inner urban migration using an agent based model*. Martin-Luther University Halle-Wittenberg



- Stefan Schmidt (2011-2017): *Global distribution of ecosystem services and the uncertainty of the valuation*. Martin-Luther University Halle-Wittenberg
- Madhumitha Jaganmohan (2012-2017): *The influence of urban form on urban ecosystem services and biodiversity*. Martin-Luther University Halle-Wittenberg
- Johannes Förster (2011-2017): *Assessing ecosystem services across multiple scales*. Martin-Luther University Halle-Wittenberg
- Markus Meyer (2012-2016): *Environmental assessment of different feedstocks for solid biofuels*. Martin-Luther University Halle-Wittenberg
- Katharina Gerstner (2011-2016): *Global effects of land use change to species distribution and global biodiversity*. Martin-Luther University Halle-Wittenberg
- Nadja Kabisch (2008-2011): *Heterogene urbane Bevölkerungsdynamik in Europa Identifizierung aktueller Prozessverläufe und ihrer Triebkräfte auf verschiedenen räumlichen Ebenen im Modellzusammenhang*. Martin-Luther University Halle-Wittenberg
- Christian Schweizer (2006-2009): *Modeling drivers and socio-environmental impacts of regional land-use change: Integrating new processes into the SITE modeling framework*. Martin-Luther University Halle-Wittenberg
- Stefan Liersch (2006-2009): *Development of a GIS-based monitoring and information system to support adaptive management*. Martin-Luther University Halle-Wittenberg
- Michael Strohbach (2007-2010): *Impact of Urban Patterns on ecosystem function and services*. Martin-Luther University Halle-Wittenberg
- Maik Renner (2008-2011): *Land use effects and climate impacts on evapotranspiration and catchment water balance*. TU Dresden
- Annelie Holzkämper (2004-2007): *Spatial optimization of land-use patterns with respect to habitat functions*. Martin-Luther University Halle-Wittenberg
- Christine Vogel (1999-2002): *Räumlich explizites Modell auf Basis von Habitataignung und Populationsdynamik für Carabiden*. TU Braunschweig

### Mentoring/Supervising incl. Committee Membership, ongoing

- Maria Gabriela Rodríguez Barrera: *The role of prairie dogs in maintaining ecological functions and plant functional diversity in Mexican grasslands*, Martin-Luther University Halle-Wittenberg (work in progress since 2018)
- Andreas Dittrich: *Trade-offs between ecosystem service and biodiversity in German agricultural landscapes*, Martin-Luther University Halle-Wittenberg (work in progress since 2013)
- Silvia Ceausu: *Managing rewilding for biodiversity and ecosystem services*. Martin-Luther University Halle-Wittenberg and German Centre for integrative Biodiversity research (work in progress since 2011)
- Cheng Guo: *Understanding patterns of population dynamics and residential mobility in different European cities using conceptual agent-based models*. Martin-Luther University Halle-Wittenberg (work in progress since 2013)
- Susanne Mühlner: *Trade-off of reforestation, agricultural production and recreation given various land management measures*. Martin-Luther University Halle-Wittenberg (work in progress since 2012)

### Committee Member/External Thesis Review

- Jule Schulze (2016): *Social-ecological modeling for policy analysis in transformative land systems. Supporting evaluation and communication for sustainability*, University Osnabrück, 1st supervisor Prof. Dr. Karin Frank.
- Laura Kehoe (2016): *Of food & fauna: investigating the relationship between global agricultural land use & biodiversity*, Humboldt University Berlin. 1st supervisor Prof. Dr. Tobias Kuemmerle.

- Benjamin Stuch (2017) *Food Security and Biodiversity Conservation under Global Change*. University Kassel. 1<sup>st</sup> supervisor: Prof. Dr. Joe Alcamo
- Sibyl Hanna Brunner (2017): *How to reach desired futures supporting key ecosystem services? – A backcasting approach for inferring management strategies from the local to the regional scale*. ETH Zurich, Swiss. 1<sup>st</sup> supervisor Prof. Dr. Gret-Regamy
- Shalini Gupta (2010): *A Modeling Analysis of Changing Global Land Use as affected by Changing Demands for Wood Products*. University Kassel, 1<sup>st</sup> supervisor: Prof. Dr. Joe Alcamo
- Mira Kattwinkel (2009): *Biodiversity of urban brownfields: Modelling species occurrence and persistence in dynamic habitats*. University Oldenburg, 1<sup>st</sup> supervisor Prof. Dr. Michael Kleyer.
- Andre Jellema (2008): *Analysis and Design of Multifunctional Agricultural Landscapes - a Graph Theoretic Approach*. University Wageningen
- Mathias Mimler (2008): *Design, implementation and application of a generic framework for iterated regional land-use modelling*. University Kassel, 1<sup>st</sup> supervisor: Prof. Dr. Joe Alcamo
- Maik Heistermann (2006): *Modelling the Global Dynamics of Rain-fed and Irrigated Croplands*. Faculty of Computer Science. University Kassel, 1<sup>st</sup> supervisor: Prof. Dr. Joe Alcamo
- Barbara Strauss (2006): *Insects in urban brownfields – Analysis of species occurrences, community composition, and trait frequencies along a successional gradient*, Faculty for Mathematics and Natural Sciences, University Oldenburg, Germany, 1<sup>st</sup> supervisor Prof. Dr. Michael Kleyer.
- Sven Lautenbach (2005): *Modellintegration zur Entscheidungsunterstützung für die Gewässergütebewirtschaftung im Einzugsgebiet der Elbe*, Universität Osnabrück, 1<sup>st</sup> supervisor: Prof. Dr. Michael Matthis
- Janina Onigkeit (2005): *Ein Modell für die Stickstoff- und Kohlenstoffumsätze im Boden von Agrarökosystemen unter besonderer Berücksichtigung der Variabilität der mikrobiellen Aktivität*. TU Braunschweig, 1<sup>st</sup> supervisor Prof. Dr. Otto Richter