

Full publication list – Martin Volk

Books

1. UNU-IHDP (eds., 2014, member of editorial advisory board): Land, Water, and People. From Cascading Effects to Integrated Flood and Drought Responses. Summary for Decision-Makers. Bonn: UNU-IHDP, 32 pp.
2. Krönert, R., U. Steinhardt & **M. Volk** (Eds., 2001): Landscape balance and landscape assessment. – Springer: 304 pp.
3. Steinhardt, U. & **M. Volk** (Eds., 1999): Regionalisierung in der Landschaftsökologie: Forschung, Planung, Praxis. - Teubner-Verlag, 400 pp.
4. **Volk, M.** (1996): Geomorphodynamik eines vergletscherten hocharktischen Küstengebietes, Liefde- und Bockfjord, NW-Spitzbergen. – Selbstverlag, Giessen, 170 pp.

Paper in ISI-Reviewed Journals

2024

- Leone, M., F. Gentile, A. Lo Porto, G.F. Ricci, C. Schürz, M. Strauch, **M. Volk** & A. & A.M. De Girolamo (2024): Setting an Environmental Flow regime under climate change in a data-limited Mediterranean basin with temporary river. *Journal of Hydrology: Regional Studies* 101698, <https://doi.org/10.1016/j.ejrh.2024.101698>
- Magnier, J., B. Fribourg-Blanc, T. Lemann, F. Witing, W. Critchley & **M. Volk** (2024): Natural/Small Water Retention Measures: their contribution to ecosystem-based concepts. *Sustainability* 16(3), 1308, <https://doi.org/10.3390/su16031308>
- Zhang, C., B. Su, M. Beckmann & **M. Volk** (2024): Energy-based evaluation of ecosystem services: Progress and perspectives. *Renewable and Sustainable Energy Reviews* 192, 114201, <https://doi.org/10.1016/j.rser.2023.114201>

2023

- Zhang, C., W. Ran, S. Fang, S. Hu, M. Beckmann & **M. Volk**: Divergent glacier area and elevation changes across the Tibetan Plateau in the early 21st century. *Anthropocene* 44, 100419, <https://doi.org/10.1016/j.ancene.2023.100419>
- Derepasko, D., F. Witing, F.J. Peñas, J. Barquín & **M. Volk** (2023): Towards adaptive water management - Optimizing river water diversion at the basin scale under future environmental conditions. *Water* 15(18), 3289, <https://doi.org/10.3390/w15183289>
- Witing, F., **M. Volk** & U. Franko (2023): Modeling Soil Organic Carbon Dynamics of Arable Land across Scales: A Simplified Assessment of Alternative Management Practices on the Level of Administrative Units. *Agronomy* 13, 1159, <https://doi.org/10.3390/agronomy13041159>

2022

Seppelt, R., S. Klotz, E. Peiter & **M. Volk** (2022): Agriculture and food security under a changing climate: An underestimated challenge. *iScience* 25, 10551, <https://doi.org/10.1016/j.isci.2022.105551>

Lausch, A., ..., **M. Volk**, ... & R. Baatz (2022): Linking Remote Sensing of Geodiversity and Traits relevant to Biodiversity— Part III: Traits, Processes and Remote Sensing Characteristics of Geomorphology. *Remote Sensing* 14, 2279: <https://doi.org/10.3390/rs14092279>

Witing, F., M.A.E. Forio, F. Burdon, B. McKie, P. Goethals, M. Strauch & **M. Volk** (2022): Riparian reforestation on the landscape scale – Navigating trade-offs among agricultural production, ecosystem functioning and biodiversity. *Journal of Applied Ecology*: <https://doi.org/10.1111/1365-2664.14176>

Lee, H., B. Seo, A.F. Cord, **M. Volk** & S. Lautenbach (2022): Using crowdsourced images to study selected cultural ecosystem services and their relationships with species richness and carbon sequestration. *Ecosystem Services* 54, 101411: <https://doi.org/10.1016/j.ecoser.2022.101411>

Jungandreas, A., S. Roilo, **M. Strauch**, T. Václavík, **M. Volk** & A. Cord (2022): Response of endangered bird species to land-use changes in an agricultural landscape in Germany. *Regional Environmental Change* 22, Article number 19i: <https://doi.org/10.1007/s10113-022-01878-3>

Forio, M.A.E., F.J. Burdon, N. de Troyer, K. Lock, F. Witing, L. Baert, N. de Saeyer, G. Risnoveanu, C. Popescu, B. Kupilas, N. Friberg, P. Boets, R.K. Johnson, **M. Volk**, B.G. McKie & P. Goethals (2022): A Bayesian Belief Network learning tool integrates multi-scale effects of riparian buffers on stream invertebrates. *Science of The Total Environment*: <https://doi.org/10.1016/j.scitotenv.2021.152146>

Maasri, A., S. Jähnig, M.C. Adamescu,...**M. Volk**,...C. Wolter & S. Worischka (2021): A global agenda for advancing freshwater biodiversity research. *Ecology Letters*: <https://onlinelibrary.wiley.com/doi/10.1111/ele.13931>

Owusu, A.G., M. Mul, M. Strauch, P. van der Zaag, **M. Volk** & J.H. Slinger (2022): The clam and the dam: A Bayesian belief network approach to environmental flow assessment in a data scarce region. *Science of the Total Environment* 810, 151315 DOI ((<https://doi.org/http://dx.doi.org/10.1016/j.scitotenv.2021.151315>)(doi)\$).

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Derepasko, D., F.J. Peñas, J. Barquín & **M. Volk** (2021): Applying Optimization to Support Adaptive Water Management of Rivers. *Water* 2021, 13, 1281. <https://doi.org/10.3390/w13091281>

Derepasko, D., J.H.A. Guillaume, A.C. Horne & **M. Volk** (2021): Considering scale within optimization procedures for water management decisions: balancing environmental flows and human needs. *Environmental Modelling & Software* (doi: <https://doi.org/10.1016/j.envsoft.2021.104991>).

Kaim, A., B. Bartkowski, N. Lienhoop, C. Schröter-Schlaack, **M. Volk** & M. Strauch (2021): Combining biophysical optimization with economic preference analysis for agricultural land use allocation. *Ecology & Society* 26(1), 9 (Doi: 10.5751/ES-12116-260109).

2020

Donmez, C., O. Sari, S. Berberoglu, A. Cilek, O. Satir & **M. Volk** (2020): Improving the Applicability of the SWAT Model to Simulate Flow and Nitrate Dynamics in a Flat Data-scarce Agricultural Region in the Mediterranean. *Water* 12(12), 3479 (Doi: 10.3390/w12123479)

Lausch, A., ...**M. Volk**,... & C. Thiel (2020): Linking the Remote Sensing of Geodiversity and Traits Relevant to Biodiversity—Part II: Geomorphology, Terrain and Surfaces. *Remote Sensing* 12, 22 (<https://www.mdpi.com/2072-4292/12/22/3690#>).

Fu, B., J.S. Horsburgh, A.J. Jakeman, C. Gualtieri, T. Arnold, L. Marshall, T.R. Green, N.W.T. Quinn, **M. Volk**, R.J. Hunt, L. Vezzano, B.F.W. Croke, J.D. Jakeman, V. Snow & B. Rashleigh (2020): Modeling water quality in watersheds: From here to the next generation. *Water Resour. Res.* (<https://doi.org/10.1029/2020WR027721>)

Forio, M.A.E., N. de Troyer, K. Lock, F. Witing, L. Baert, N. de Saeyer, G. Risnoveanu, C. Popescu, F.J. Burdon, B. Kupilas, N. Friberg, P. Boets, **M. Volk**, B.G. McKie & P. Goethals (2020): Small Patches of Riparian Woody Vegetation Enhance Biodiversity of Invertebrates. *Water* 2020, 12(11): 3070 (<https://doi.org/10.3390/w12113070>)

Hanisch, M., O. Schweiger, A.F. Cord, **M. Volk** & S. Knapp (2020): Plant functional traits shape multiple ecosystem services, their trade-offs and synergies in grasslands. *Journal of Applied Ecology* 57(8): 1535-1550 (<https://doi.org/10.1111/1365-2664.13644>)

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Cambien, N., S. Gobeyn, I. Nolivos, M.A.Eurie Forio, M. Arias-Hidalgo, L. Dominguez-Granda, F. Witing, **M. Volk** & P.L.M. Goethals (2020): Using the Soil and Water Assessment Tool to Simulate the Pesticide Dynamics in the Data Scarce Guayas River Basin, Ecuador. *Water* 12(3): 696 (<https://doi.org/10.3390/w12030696>)

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Hagemann, N., E.H. van der Zanden, B.A. Willaarts, A. Holzkamper, **M. Volk**, C. Rutz, J.A. Priess & M. Schönhart (2019): Bringing the sharing-sparing debate down to the ground—Lessons learnt for participatory scenario development. *Land Use Policy* (<https://doi.org/10.1016/j.landusepol.2019.104262>)

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Kaim, A., M. Strauch & **M. Volk** (2020): Using Stakeholder Preferences to Identify Optimal Land Use Configurations. *Frontiers in Water* 2: 579087.

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Stefanova, A., C. Hesse, V. Krysanova, **M. Volk** (2019): Assessment of Socio-Economic and Climate Change Impacts on Water Resources in Four European Lagoon Catchments. *Environmental Management* 64(6): 701–720 (<https://doi.org/10.1007/s00267-019-01188-1>).

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Karner, K., A. F. Cord, N. Hagemann, N. Hernandez-Mora, A. Holzkämper, B. Jeangros, N. Lienhoop, H. Nitsch, D. Rivas, E. Schmid, C.J.E. Schulp, M. Strauch, E. van der Zanden, **M. Volk**, B. Willaarts, N. Zarrineh & M. Schönhart (2019): Developing stakeholder-driven scenarios on land sharing and land sparing – insights from five European case studies. *Journal of Environmental Management* 241: 488-500.

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Kaim, A., A. Cord & **M. Volk** (2018): A review of multi-criteria optimization techniques for agricultural land use allocation. *Environmental Modelling & Software* 105: 79-93 (<https://doi.org/10.1016/j.envsoft.2018.03.031>).

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6. **Volk, M.** (2016): Präsentation des UFZ, des Departments Landschaftsökologie und Projektideen. EU-MEX Meeting, Mexico City, Mexico, March 8th – 9th, 2016
7. **Volk, M.** (2016): Using models for decision support in sustainable river basin management - still dancing in the dark?. Symposium “Sustainability in time and space”, organized by A. Voinov, University of Twente, Enschede, The Netherlands.
8. **Volk, M.** (2015): Soil and Water Assessment Tool (SWAT) - Anwendungsbeispiele und Entwicklung. Geoinformatik-Kolloquium am Institute for Geography, University of Tübingen, Germany, February 2, 2015.
9. **Volk, M.** (2014): Brasilien – zwischen Aufschwung und Umweltveränderung. Verein für Erdkunde zu Halle, December 16, 2014, Halle, Germany.
10. **Volk, M.** (2014): Trade-offs and Synergies between Freshwater Ecosystem Services – Implications for Land Use Intensities and Landscape Configurations. 7th Sino-German Workshop on Biodiversity Conservation: Challenges in Water Quality & Quantity. Approaches & Methodologies for Freshwater Ecosystem Management in the Context of TEEB. July 6-9, 2014, Shenyang, Liaoning Province, China.
11. **Volk, M.** (2014): Land use strategies based on trade-off assessments reconciling biodiversity and ecosystem services. Scientific workshop of UNU-FLORES and UFZ, June 23, 2014, Leipzig, Germany.
12. **Volk, M.** (2014): Are they used? Environmental decision support systems (EDSS) development – Challenges and best practices. HarmBio-Workshop on ‘Bridging the gap between IT design and biodiversity conservation modelling’. Technical University of Crete, Department of Production Engineering and Management, May 29-31, 2014, Chania, Crete
13. **Volk, M.** (2014): Ecosystem Services and River Basin Models. C03 Special Session: Ecosystems and their Services in the Nexus. International Conference in the Water-Energy-Food Nexus. 19-20 May 2014 in Bonn, Germany.
14. **Volk, M.** (2014): Integrating water and land resources management and ecosystem services by combining scenario analysis and optimization on different scales. Session No. 120: Joint and integrated management of land and water resources (*Round Table Discussions*). 2nd Global Land Project Open Science Meeting. March 19-21, 2014, Berlin, Germany.
15. **Volk, M.** (2013): Integrated River Basin Management – A Challenge for Hydrology. Florisa Melone Memorial Conference. Assisi, Italy, Basilica of Saint Francis, October 10-11th, 2013.
16. **Volk, M., M. Strauch & F. Witing** (2013): Water quality in large-scale integrated modeling – Challenges and key considerations on the example of model applications in Central Germany. Water & Environmental Dynamics. 6th International Conference on Water Resources and Environmental Research. Koblenz, Germany, June, 3-7, 2013.
17. **Volk, M.** (2013): Water Resources Management and Ecosystem Services - Integrating what needs to be integrated. GWSP Conference on “Water in the Anthropocene: Challenges for Science and Governance, Indicators, Thresholds and Uncertainties of the Global System. Bonn, Germany, May 12-14, 2013.
18. **Member of Panel discussion** (Joe Alcamo, Kasper Kok, Fulco Ludwig, **Martin Volk**). Special Session „Do we have a sound basis for predicting future water resources?“ Bonn, 21.-24. Mai 2013. Water in the Anthropocene: Challenges for Science and Governance. Indicators, Thresholds and Uncertainties of the Global Water System.

19. **Volk, M.** (2012): Quantifizierung und Bewertung von Ökosystemleistungen. Vortrag am Landesbetrieb für Hochwasserschutz und Wasserwirtschaft Sachsen-Anhalt. 17. Oktober 2012, Halle (Saale), Germany.
20. **Volk, M. & A. v. Griensven** (2012): The Soil and Water Assessment Tool (SWAT). Workshop held at EMBRAPA Training Center, September 27, 2012, Brasilia, Brazil.
21. **Volk, M.** (2012): Soil erosion and sediment transport – consequences, monitoring, models and measures. Workshop “Degraded soils”, September 24-26, Brasilia, Brazil.
22. **Volk, M.** (2012): Towards the implementation of the water framework directive? Lessons learned from nutrient simulations in watersheds with different conditions. Life M3 Workshop “Modelling pressures and impacts for WFD river basin management: Lessons learned and future prospects. June 14-15, 2012, Cologne, Germany.
23. **Volk, M., Lautenbach, S., Seppelt, R.** (2011). Introductory lecture: Landscape Management and Landscape Modeling. RegioResources 2011. A cross-disciplinary dialogue on sustainable development of regional resources. Dresden, May 17-20, 2011 (<http://www.eli-web.com/index.php?article=news&lang=english>).
24. **Volk, M.** (2009): Zur Funktion des Waldes im Landschaftswasserhaushalt. Akademie der Sächsischen Landesstiftung Natur und Umwelt. Themenbereich „Wälder und Gewässer – wichtige Strukturelemente nachhaltiger Landschaften“. 28. March 2009, Neschwitz, Germany.
25. **Volk, M.** (2007): River Basin analysis and modelling as basis for the implementation of the European Water Framework Directive – Vision, Reality and Perspectives. The Fenner School Lecture, 18 December 2007, Centre for Resource and Environmental Studies, ANU, Canberra, Australia

Contributions to Workshops and Proceedings

1. Strauch, M., A. Kaim & **M. Volk** (2019): Land use optimization based on modeling, metaheuristics, and multi-criteria decision analysis. International SWAT Conference, July 17-19, 2019, Vienna, Austria. Book of abstracts: 88 (<https://swat.tamu.edu/media/116340/book-of-abstracts-20190716.pdf>)
2. Forio, M.A.E, K. Lock, F. Witing, L. Baerts, N. de Troyer, G. Risnoveau, F. Burdon, B. Kupilas, N. Friberg, **M. Volk**, B. Mckie & P. Goethals (2019): Modelling the effect of woody riparian vegetation on the diversity and composition of stream macroinvertebrates and spiders in the Zwalm River basin (Belgium). 11th Symposium for European Freshwater Sciences, June 30–July 5, 2019, Zagreb, Croatia, Book of abstracts: 314 (<http://www.sefs11.biol.pmf.hr/wp-content/uploads/2019/07/Book-of-abstract.pdf>)
3. Witing, F., M. Strauch, F.J. Burdon, M.A.E. Forio & **M. Volk** (2019): Towards an optimal allocation of riparian forest at catchment scale? 11th Symposium for European Freshwater Sciences, June 30–July 5, 2019, Zagreb, Croatia, Book of abstracts: 327 (<http://www.sefs11.biol.pmf.hr/wp-content/uploads/2019/07/Book-of-abstract.pdf>)
4. **Volk, M., A. Kaim, A. Cord & M. Strauch** (2019): Using optimization to minimize trade-offs between ecosystem services and biodiversity in agricultural landscapes. 4th Open Science Meeting of the Global Land Programme, April 24-26, Bern, Switzerland.
5. Cord, A., M. Beckmann, A. Dittrich, A. Jungandreas, M. Strauch, **M. Volk** & G. Ziv (2019): Using the ecosystem service concept in conservation science – opportunity or risk? 4th Open Science Meeting of the Global Land Programme, April 24-26, Bern, Switzerland.
6. **Volk, M.** (2018): Using SWAT and other models for simulating ecosystem services and trade-offs – A critical reflection. International SWAT conference, September 19-21, Brussels, Belgium. Book of abstracts: 15 (<https://swat.tamu.edu/media/116089/book-of-abstracts-2018-09-11.pdf>).
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10. Scheuer, S., D. Haase & **M. Volk** (2018): Integrative assessment of 20th century climate change observations: Identifying needs and barriers in adaptation to climate change-related hazards in urban areas. EGU 2018
11. Locher-Krause K., S. Lautenbach & **M. Volk** (2017): Quantifying and understanding spatio-temporal ecosystem services interactions in transformed forest landscapes: insights from a Patagonian biodiversity hotspot. 125th IUFRO Anniversary Congress 2017, Interconnecting Forest, Science and People, 19-22 September, 2017 Freiburg, Germany.
12. Strauch, S., F. Witing, C. Schürz & **M. Volk** (2017): Towards multifunctional agricultural landscapes in Europe: SWAT as a key to assess synergies and trade-offs between ecosystem services and biodiversity. International SWAT Conference, June 26-30, 2017, Warsaw, Poland.
13. Guse, B., M. Pfannerstill, J. Kiesel, M. Strauch, **M. Volk** & N. Fohrer (2017): How do hydrological processes change in their spatio-temporal relevance under changing climatic conditions? International SWAT Conference, June 26-30, 2017, Warsaw, Poland.
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15. Guse, B., M. Pfannerstill, J. Kiesel, M. Strauch, **M. Volk** & N. Fohrer (2017): Analysing spatio-temporal dynamics of processes and parameters in a hydrological model to understand catchment similarities among different landscapes. Geophysical Research Abstracts Vol. 19, EGU2017-15382, 2017. EGU General Assembly 2017.
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18. Strauch, M., A.F. Cord, A. Kaim, C. Pätzold, C. Schweitzer, R. Seppelt & **M. Volk** (2016): SeCoMOLA - A multi-objective land use optimization framework for exploring interactions between ecosystem services and biodiversity. Stream 6-73, EcoSummit 2016, 29.08.-01.09.2016, Montpellier, France.
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20. Coles, N.A., Y. Wang, **M. Volk** & J. Wu (2016): Ecoservices and multifunctional landscapes: Balancing the benefits of integrated ES based water resources, agricultural and forestry production systems. Stream 6-73, EcoSummit 2016, 29.08.-01.09.2016, Montpellier, France.
21. Strauch, M., A. Cord, A. Kaim, C. Paetzold, C. Schweitzer, R. Seppelt & **M. Volk** (Presentation by M. Volk) (2016): Towards Multifunctionality of Landscapes – A Multi-Objective Land Use Optimization Framework for Exploring Interaction between Ecosystem Services and Biodiversity. Session D10, iEMSs 2016, July 10th – 14th, 2016, Toulouse, France,.

22. Kaim, A., A. Cord & **M. Volk** (2016): Optimal land use?! – A review on optimization techniques used in multi-criteria decision analysis. Session B1, iEMSs 2016, July 10th – 14th, 2016.Toulouse, France.
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32. Julich, S., H. Rathjens, **M. Volk** & K.-H. Feger (2015): Application of the new grid-based SWAT landscape model in a small mountainous watershed in Germany. 2015 International SWAT conference, June 24-26, 2015, Sardinia, Italy.
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35. **Volk, M.**, U. Franko, F. Witing & G. Jäckel (2015): Large-scale identification of hot spots for soil carbon demand under climate change and bioenergy production. ASABE 1st Climate Change Symposium: Adaptation and Mitigation. May 3-5, 2015, Chicago, IL, USA.
36. Guse, B., M. Pfannerstill, M. Strauch, D. Reusser, **M. Volk** & N. Fohrer (2015): Maximising diagnostic information by relating temporal variations in parameter sensitivity to different segments of the flow duration curve. Geophysical Research Abstracts 17, EGU2015-5178, 2015. EGU General Assembly 2015.
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39. Lautenbach, S., **M. Volk**, M. Strauch, G. Whittaker & R. Seppelt (2014): Water related trade-offs of different crop production schemes for biogas production in a German case study. Workshop "Biomass for energy - lessons from the Bioenergy Boom", November 24 and 25, 2014, UFZ Leipzig, Germany.
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47. Mühlner, S., F. Witing, S. Lautenbach & **M. Volk** (2013): Using SWAT for simulating trade-offs and synergies among ecosystem services related to afforestation in a Central German Watershed. 2013 International SWAT Conference & Workshops, Toulouse, France, July 17 - 19, 2013, Book of Abstracts: <http://swat.tamu.edu/media/81472/Book-of-Abstracts-Post-Conference.pdf>
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