



## Publications

Helmholtz Centre for Environmental Research – UFZ

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Topic 4: Coastal Transition Zones under Natural and Human Pressure

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## Preface

This list includes all publications of the year 2025 assigned to program topic 4 “Coastal Transition Zones under Natural and Human Pressure” of the Helmholtz research program "Changing Earth - Sustaining our Future" within the research field Earth and Environment which were authored, co-authored or edited by staff members of the Helmholtz Centre for Environmental Research - UFZ.

If a publication belongs to more than one program topic, both primary and secondary assignments are indicated.

The editorial deadline for this publication list was 6 March 2026.

In contrast to external authors, UFZ staff names are highlighted in **bold type** in all publications.

The concluding index lists all UFZ authors in alphabetical order with the sequential numbers of their publications.

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## Publications in ISI/Scopus listed journals/series

1. Achterberg, E.P., Rackelmann, F., Ramesh, A., O'Connor, J., Garcìa-Oliva, O., Jayachandran, S., Wichert, V., Li, X., Purkiani, K., Needham, D.M., Busmann, I., Fischer, P., Kopf, A., Lemmen, C., Scharsack, J.P., **Siebert, C., Kamjunke, N.**, Sokolova, I.M., Brix, H. (2025):  
Identifying and addressing the components of extreme physical-oceanographical events for improved risk management in coastal systems  
*Front. Mar. Sci.* **12** , art. 1681652  
[10.3389/fmars.2025.1681652](https://doi.org/10.3389/fmars.2025.1681652)  
Main topic T4; Secondary topic T5
2. **Ague, S.K.d.L., Rinke, K.**, Mama, D., **Koschorreck, M.** (2025):  
Greenhouse gas emissions from a large and shallow tropical African lake: contribution of different gases and emission pathways  
*J. Geophys. Res.-Biogeosci.* **130** (10), e2024JG008572  
[10.1029/2024JG008572](https://doi.org/10.1029/2024JG008572)  
Main topic T4; Secondary topic T5
3. **Aurich, P.**, Spank, U., **Koschorreck, M.** (2025):  
Surface CO<sub>2</sub> gradients challenge conventional CO<sub>2</sub> emission quantification in lentic water bodies under calm conditions  
*Biogeosciences* **22** (6), 1697 - 1709  
[10.5194/bg-22-1697-2025](https://doi.org/10.5194/bg-22-1697-2025)  
Main topic T5; Secondary topic T4
4. Basso, S., **Musolff, A.**, de Wit, H.A. (2025):  
More frequent runoff and connected sources in headwaters promote browning of northern freshwaters  
*Environ. Sci. Technol. Lett.* **12** (1), 51 - 56  
[10.1021/acs.estlett.4c00939](https://doi.org/10.1021/acs.estlett.4c00939)  
Main topic T5; Secondary topic T4
5. Boumaiza, L., Chesnaux, R., Stotler, R.L., Zahi, F., Mayer, B., Leybourne, M.I., Otero, N., Johannesson, K.H., Huneau, F., Schüth, C.K., **Knoeller, K.**, Ortega, L., Stumpp, C. (2025):  
Multiple environmental tracers combined with a constrained Bayesian isotope mixing model to elucidate nitrate and sulfate contamination in a coastal groundwater system  
*Sci. Total Environ.* **959** , art. 178265  
[10.1016/j.scitotenv.2024.178265](https://doi.org/10.1016/j.scitotenv.2024.178265)

6. Bussmann, I., Brix, H., Flöser, G., Fischer, P.F., Jayachandran, S., Achterberg, E.P., Carstens, K., Kirstein, I.V., Sanders, T., Raupers, B., Voynova, Y., **Kamjunke, N.** (2025):  
Winter flood significantly changes salinity and nutrient export from land to sea  
*Front. Mar. Sci.* **12**, art. 1599007  
[10.3389/fmars.2025.1599007](https://doi.org/10.3389/fmars.2025.1599007)  
Main topic T5; Secondary topic T4
7. **Dordoni, M., Musolff, A., Knöller, K., Coder, L., Krauss, M., Rosenlöcher, Y., Büttner, O., Tittel, J.** (2025):  
Lake–groundwater biogeochemical interactions in a river-delimited system: the Groundwater and Lakes Urban Observatory (GLUO)  
*Int. Rev. Hydrobiol.* **110** (2), 123 - 150  
[10.1002/iroh.70025](https://doi.org/10.1002/iroh.70025)  
Main topic T4; Secondary topics T5, T9
8. **Große, A., Graeber, D., Fink, P.,** Reisinger, A.J., **Kamjunke, N., Meyer, M., Ilić, M., Borchardt, D., Perujo, N.** (2025):  
Contrasting functional responses of benthic and hyporheic stream biofilms to light availability and macronutrient stoichiometry  
*Limnol. Oceanogr.* **70** (S2), S126 - S139  
[10.1002/lno.70069](https://doi.org/10.1002/lno.70069)  
Main topic T5; Secondary topic T4
9. **Große, A., Perujo, N., Fink, P.,** Reisinger, A.J., **Borchardt, D.,** McCarthy, M.J., **Graeber, D.** (2025):  
Stream C to N to P ratios aligned with microbial needs enhance biofilm nitrate uptake and subsequent nitrogen loss  
*Biogeochemistry* **168** (4), art. 62  
[10.1007/s10533-025-01252-5](https://doi.org/10.1007/s10533-025-01252-5)  
Main topic T4; Secondary topic T5
10. **Heinemann, N.,** Yang, S., **Büttner, O., Borchardt, D.** (2025):  
Nutrient loading and stream order shape benthic and pelagic spring algal biomass in a large, temperate river basin (Elbe River)  
*J. Environ. Manage.* **383**, art. 125440  
[10.1016/j.jenvman.2025.125440](https://doi.org/10.1016/j.jenvman.2025.125440)  
Main topic T5; Secondary topic T4

11. **Herzprung, P.,** Sobolev, A., **von Tümpling, W., Kamjunke, N.,** Schwidder, M., **Lechtenfeld, O.J.** (2025):  
Temporal dynamics and intermediate product formation in DOM phototransformation revealed by liquid chromatography ultrahigh-resolution mass spectrometry  
*Environ. Sci. Technol.* **59** (27), 13787 - 13797  
[10.1021/acs.est.5c01986](https://doi.org/10.1021/acs.est.5c01986)  
Main topic T4; Secondary topics T5, T9
12. **Hommel, E., König, M., Braun, G., Krauss, M., Kamjunke, N., Brack, W.,** Matousu, A., Sanders, T., Bussmann, I., Achterberg, E.P., Raupers, B., **Escher, B.I.** (2025):  
Following the mixtures of organic micropollutants with *in vitro* bioassays in a large lowland river from source to sea  
*ACS Environ. Au* **5** (4), 363 - 375  
[10.1021/acsenvironau.4c00059](https://doi.org/10.1021/acsenvironau.4c00059)  
Main topic T9; Secondary topics T4, T5
13. Kaminsky, E., Griebler, C., Englisch, C., Steiner, C., Formanek, C., Buga-Nyékí, E., **Knoeller, K.,** Laaha, G., Sandén, H., Stumpp, C. (2025):  
Recharge and redox processes drive urban groundwater quality in Vienna's shallow aquifers  
*J. Hydrol.* **662, Part A** , art. 133931  
[10.1016/j.jhydrol.2025.133931](https://doi.org/10.1016/j.jhydrol.2025.133931)  
Main topic T4; Secondary topic T5
14. **Leng, P., Rode, M., Koschorreck, M.** (2025):  
Summer drought enhances diurnal amplitude of CO<sub>2</sub> in two German rivers of different size  
*Water Res.* **271** , art. 122870  
[10.1016/j.watres.2024.122870](https://doi.org/10.1016/j.watres.2024.122870)  
Main topic T5; Secondary topic T4
15. Minaudo, C., Abonyi, A., Alcaraz, C., Diamond, J., Howden, N.J.K., **Rode, M.,** Romero, E., Thieu, V., Worrall, F., Zhang, Q., Benito, X. (2025):  
OLIGOTREND, a global database of multi-decadal chlorophyll *a* and water quality time series for rivers, lakes, and estuaries  
*Earth Syst. Sci. Data* **17** (7), 3411 - 3430  
[10.5194/essd-17-3411-2025](https://doi.org/10.5194/essd-17-3411-2025)  
Main topic T4; Secondary topic T5

16. **Rocha Vogel, A., Kolberg, Y., von Tümpling, W.** (2025):  
Effects of salinity on the adsorption of cadmium and zinc to tire and road wear particles in water – Significance for river systems and road runoff treatment  
*Sci. Total Environ.* **977** , art. 179359  
[10.1016/j.scitotenv.2025.179359](https://doi.org/10.1016/j.scitotenv.2025.179359)  
Main topic T4; Secondary topic T5
17. **Sauke, F., Fischer, R., Rode, M.** (2025):  
A review on modelling forest biogeochemistry and the coupled forest - soil interactions in a changing world  
*Environ. Modell. Softw.* **187** , art. 106381  
[10.1016/j.envsoft.2025.106381](https://doi.org/10.1016/j.envsoft.2025.106381)  
Main topic T4; Secondary topic T5
18. Schomberg, A.C., **von Tümpling, W.**, Kynast, E. (2025):  
Arsenic leakage crisis in supply chain of battery storage materials: Water quality footprint of cobalt mining demands action  
*Water Resour. Ind.* **33** , art. 100277  
[10.1016/j.wri.2025.100277](https://doi.org/10.1016/j.wri.2025.100277)  
Main topic T4; Secondary topic T5
19. **Schubert, M., Müller, C., Knoeller, K.**, Juranová, E. (2025):  
Anthropogenic tritium as indicator for groundwater inflow into major rivers – Potentials and challenges of a tracer application  
*J. Environ. Radioact.* **288** , art. 107745  
[10.1016/j.jenvrad.2025.107745](https://doi.org/10.1016/j.jenvrad.2025.107745)  
Main topic T4; Secondary topic T5
20. **Schubert, M., Saavedra Melendez, F.**, Lin, M., Terzer-Wassmuth, S., **Hertle, L.**, Tegen, I., **Knoeller, K.**, Schmidt, A. (2025):  
Tackling voids in observations: An approach to reconstruct rainfall <sup>35</sup>S timeseries from proxy parameters  
*ACS ES&T Wat.* **5** (7), 4002 - 4012  
[10.1021/acsestwater.5c00250](https://doi.org/10.1021/acsestwater.5c00250)  
Main topic T5; Secondary topic T4
21. Sitek, S., Janik, K., Wunderlich, A., Jakóbczyk-Karpierz, S., Imig, A., Kondracka, M., **Knöller, K.**, Rein, A. (2025):  
Integrated Managed Aquifer Recharge: Assessing the efficiency of riverbank filtration and infiltration ditches for sustainable groundwater management in industrial areas  
*J. Environ. Manage.* **389** , art. 125849  
[10.1016/j.jenvman.2025.125849](https://doi.org/10.1016/j.jenvman.2025.125849)  
Main topic T4; Secondary topic T5

22. Spank, U., **Koschorreck, M., Aurich, P.**, Sanchez Higuera, A.M., Raabe, A., Holstein, P., Bernhofer, C., Mauder, M. (2025):  
Rethinking evaporation measurement and modelling from inland waters – A discussion of the challenges to determine the actual values on the example of a shallow lowland reservoir  
*J. Hydrol.* **651** , art. 132530  
[10.1016/j.jhydrol.2024.132530](https://doi.org/10.1016/j.jhydrol.2024.132530)  
Main topic T5; Secondary topic T4
23. Wang, H.-J., **Merz, R.**, Basso, S. (2025):  
Constructing a geography of heavy-tailed flood distributions: insights from common streamflow dynamics  
*Hydrol. Earth Syst. Sci.* **29** (6), 1525 - 1548  
[10.5194/hess-29-1525-2025](https://doi.org/10.5194/hess-29-1525-2025)  
Main topic T4; Secondary topic T5

## Book chapters

24. **Herzprung, P., Waldemer, C., Koschorreck, M., Lechtenfeld, O.J.** (2025):  
Methane ebullition from freshwater aquaculture pond and the corresponding natural organic matter composition in sediments  
*Wasserbewirtschaftung im Einzugsgebiet der Elbe gestern, heute und morgen ~ Tagungsband. Magdeburger Gewässerschutzseminar 2025 = Magdeburgský seminář o ochraně vod 2025, 8.-9.10.2025*  
Internationale Kommission zum Schutz der Elbe (IKSE), Magdeburg, p. 116 - 117  
Main topic T5; Secondary topics T4, T9
25. **Kamjunke, N., Herzprung, P., von Tümpling, W., Matoušů, A., Znachor, P., Sanders, T., Brix, H., Busmann, I., Weitere, M., Lechtenfeld, O.J.** (2025):  
Transformation of riverine nutrients and dissolved organic matter from source to sea  
*Wasserbewirtschaftung im Einzugsgebiet der Elbe gestern, heute und morgen ~ Tagungsband. Magdeburger Gewässerschutzseminar 2025 = Magdeburgský seminář o ochraně vod 2025, 8.-9.10.2025*  
Internationale Kommission zum Schutz der Elbe (IKSE), Magdeburg, p. 14 - 15  
Main topic T5; Secondary topics T4, T9
26. **Rocha Vogel, A., Kolberg, Y., Swonarjow, S., von Tümpling, W.** (2025):  
Tire and road wear particles in rivers: Interaction with trace elements deteriorate the chemical water quality – experiments under environmental conditions  
*Wasserbewirtschaftung im Einzugsgebiet der Elbe gestern, heute und morgen ~ Tagungsband. Magdeburger Gewässerschutzseminar 2025 = Magdeburgský seminář o ochraně vod 2025, 8.-9.10.2025*  
Internationale Kommission zum Schutz der Elbe (IKSE), Magdeburg, p. 101 - 104  
Main topic T5; Secondary topic T4
27. **Tittel, J., Coder, L., Büttner, O., Knöller, K., Kronsbein, P.M., Rinke, K., Musolff, A.** (2025):  
Anthropogenic modification of riverscapes reduces the resilience of floodplain water bodies to drought  
*Wasserbewirtschaftung im Einzugsgebiet der Elbe gestern, heute und morgen ~ Tagungsband. Magdeburger Gewässerschutzseminar 2025 = Magdeburgský seminář o ochraně vod 2025, 8.-9.10.2025*  
Internationale Kommission zum Schutz der Elbe (IKSE), Magdeburg, p. 21  
Main topic T5; Secondary topic T4

## Edited reports

28. Bussmann, I., Achterberg, E., Brix, H., **Kamjunke, N.**, Raupers, B., Sanders, T. (eds., 2025):  
The MOSES Sternfahrt Expeditions of the Research Vessels LITTORINA, LUDWIG PRANDTL and MYA II to the Elbe River, Elbe Estuary and German Bight in 2024  
*Berichte zur Polar- und Meeresforschung. Reports on polar and marine research 804*  
Alfred-Wegener-Institut für Polar- und Meeresforschung, Bremerhaven, 63 pp.  
[10.57738/BzPM\\_0804\\_2025](https://doi.org/10.57738/BzPM_0804_2025)  
Main topic T4; Secondary topic T5

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