



*In combining fluid mechanics,
sediment dynamics, and pollutant
transport, I want to enable
integrated and sustainable
river management.*

AWARDS

Green Impact Award for Team Innovation

03/2023

Awarded for an activity to reduce cigarette butt littering on the university campus

Hydrology Publication Award from Dutch Hydrological Association

02/2023

Awarded for the best hydrological article published in an international journal between 2019 and 2021.

Friedrich-Wilhelm-Awards of RWTH Aachen

11/2021

Awarded to young scientists for their outstanding achievements during their PhD

Borchers Badge of RWTH Aachen University

09/2021

Awarded to PhD candidates, who pass their doctoral examinations "With Distinction".

KRYSS LISANNE WALDSCHLÄGER

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www.kryss-waldschlager.com

born 1992, in Bochum, Germany

ACADEMIC EDUCATION

PhD (Dr.-Ing.)

01/2018 - 12/2020

RWTH Aachen University

Institute of Hydraulic Engineering and Water Resources Management

Focus on plastics in the aquatic environment

Thesis: Transport Processes of Microplastic Particles in the Fluvial Environment - Erosion, Transport and Deposition

Final Grade: Summa Cum Laude

Master of Science

10/2014 - 03/2017

RWTH Aachen University

Civil Engineering, Hydraulic Engineering

Thesis: Investigation of an innovative approach for the removal of plastic particles from the pacific - Numerical simulation on the flow characteristics of plastic particles

Final Grade: 2.0

Bachelor of Science

10/2011 - 10/2014

RWTH Aachen University

Civil Engineering

Thesis: Evaluation of the adsorption capacities of a new and a loaded activated carbon using Rapid Small-Scale Column Tests

Final Grade: 2.7

A-Levels

07/2002 - 06/2011

Lessingschule Bochum

Final Grade: 1.3

WORK EXPERIENCE

Assistant Professor for Fluid Mechanics and Microplastic Transport

05/2021 - now Wageningen University

Hydrology and Environmental Hydraulics Group

Tenured since 04/2024

Research Associate

10/2017 - 04/2021 RWTH Aachen University

Institute of Hydraulic Engineering and Water Resources Management

Assistant in Online Sales

05/2017 - 08/2017 Beekeeping Geller, Aachen

PhD SUPERVISION

Nadine Liese

RUMBA - Revealing Underwater Macroplastic Pollution using Acoustic Backscatter

Co-promotor, together with Tim van Emmerik

02/2025 - now

Noortje Oosterhoff

Aggregation of microplastics with fine sediments in major European ports

Co-promotor, together with Lieke Melsen

03/2024 - now

Miranda Stibora

Modelling of plastic transport in European Rivers

Co-promotor, together with Tim van Emmerik

11/2023 - now

Derk van Grootheest

Impact of biofouling on microplastic transport

Co-promotor, together with Bart Koelmans and Merel Kooi

07/2023 - now

Hadeel Al-Zawaidah

Microplastics in turbulent water

Co-promotor, together with Ton Hoitink

01/2022 - now

Sjoukje de Lange

Dune development in the fluvial to tidal transition zone

Co-promotor, together with Ton Hoitink

05/2021 - 05/2024

SUPERVISION OF VISITING PhD CANDIDATES

Hannah Hapich

University of California, Riverside, USA
Overland transport of tire wear

03/2025 - 07/2025

Francesca Uguagliati

University of Padova, Italy
Aggregation behaviour of microplastics with mud

03/2024 - 09/2024

ACQUISITION

2023

Completing the puzzle - How do microplastics alter aquatic sediment transport
VENI grant, NWO

Project duration: 03/2024 - 02/2027

2023

INSPIRE: Innovative Solutions for Plastic Free European Rivers

Horizon-Miss-2022-Ocean-01, Horizon Europe

Project duration: 06/2023 - 05/2027

2022

Quo vadis? Discovering the impact of biofouling on fluvial microplastic transport

NWO-M grant, NWO

Project duration: 04/2023 - 03/2027

2017

Experimentelle und numerische Untersuchungen zum Transportverhalten von Mikroplastik in der limnischen Umwelt

PhD scholarship, Deutsche Bundesstiftung Umwelt

Project duration: 01/2018 - 12/2020

ACADEMIC SERVICES

2026	External Examiner for PhD thesis of Jacob Haney, University of Toronto, Canada
Since 2025	Msc Thesis Coordinator for the HWM Group, Wageningen University
2025	Co-Organizer of the NCR Career Day
2024	Examiner and committee member for the PhD thesis of Nerea Karmele Portillo de Arbeloa, University of Trento, Italy
2024	Reviewer for WIMEK PhD proposal for Alba Mols, Wageningen University
2024	Co-organizer of a Master class at River Flow conference
2023	Reviewer for project proposal for Central Research Development Fund of University of Bremen
2023	Reviewer of project proposal for the US-Israel Binational Science Foundation
2023	Reviewer of project proposal for the Bayreuth Humboldt Center Fellowship
Since 2022	Employment coordinator for the HWM group, Wageningen University
2022	Organizer NCR Theme Day "Plastic Research in the Netherlands"
2022	Special Issue guest editor for Frontiers in Environmental Sciences, Research topic 'Plastics in Aquatic Systems: From Transport and Fate to Impacts and Management Perspectives'
2022	Examiner for the PhD thesis of Tenzin Tsering, Lappeenranta-Lahti University of Technology (LUT), Finland
Since 2021	Initiator and co-organizer of WUR Plastic Day, Wageningen University

ABROAD EXPERIENCES

Research Stay in Chennai and Munnar, India

11/2019

Fieldwork on the investigation of microplastic pollution of Indian rivers in Chennai, Tamil Nadu and Munnar, Kerala. In cooperation with the Indian Institute of Technology, Madras

Erasmus+ Stay in Bilbao, Spain

06/2017

International cooperation with the Surfrider Foundation on the topic „Carry on without plastics“

TEACHING

Environmental Hydraulics / River Flow (BSc course)

Course coordinator and lecturer
Complete redesign in 2024
2021 - now

Hydraulics and Hydrometry (BSc course)

Lab practical coordinator and lecturer
2021 - now

Geophysical Fluid Mechanics (BSc course)

Lab practical coordinator and lecturer
2021 - now

Riverflow and Morphology (MSc course)

Lab practical coordinator
2021 - now

NCR Summerschool, Twente (for PhD candidates)

Lecture on Microplastic Transport
07/2025

LANGUAGES

German	
English	
Dutch	
Spanish	

IT COMPETENCES

MS Office	
LATEX	
Corel Draw	
MATLAB	
openFOAM	
PYTHON	

KEYNOTES & INVITED PRESENTATIONS (SELECTION)

TANDEM Mentoring RWTH Aachen University

Presentation on Women in Science for female Msc students, PhD candidates and postdocs
02/2026, Aachen, Germany

NCR Summer School

Microplastics in motion - Lecture for the NCR Summer School 2025
07/2025, Twente, The Netherlands

PLASTINEST Workshop

Microplastics in Motion - Learning from mineral sediment to understand microplastic transport
06/2025, Bordeaux, France

EGU General Assembly

Diverse microplastics and where to find them - Aquatic transport pathways and implications for risk assessment
Hydrology and Human Health Session
05/2025, Vienna, Austria

MARUM, Zentrum für Marine Umweltwissenschaften

Diverse microplastics and where to find them - Learning from natural sediment to tackle microplastic challenges
02/2025, Bremen, Germany

Sedimentology of Plastics: State of the art and future directions

What can we learn from clastic sediment particles to improve our understanding of microplastic transport
The Royal Society, UK
2024, Birmingham, UK

Gewässermorphologisches Kolloquium

Wie uns physikalische Modellversuche helfen können, den Transport von Mikroplastik besser zu beschreiben
03/2023, Bundesanstalt für Gewässerkunde, Koblenz, Germany

Microplastics2022 conference

From microplastic transport to representative monitoring: What can we learn from natural sediment?
11/2022, Ascona, Schweiz

Modelling Webinar

Diverse microplastics and where to find them: learning from natural sediment to tackle microplastic challenges
09/2022, NTNU, Norway

SFB Microplastics Seminar

Diverse microplastics and where to find them: learning from natural sediment to tackle microplastic challenges
05/2022, University of Bayreuth, Bayreuth, Germany

SediKring Seminar

Diverse microplastics and where to find them: learning from natural sediment to tackle microplastic challenges
03/2022, Utrecht, Netherlands

Source2Sink Webinar

Diverse microplastics and where to find them: learning from natural sediment to tackle microplastic challenges
03/2022. > 400 views on youtube

Essener Tagung

Mikroplastik als künstliches Sediment? Von natürlichen Sedimenten lernen, um zukünftige Herausforderungen zu bewältigen
03/2022, Aachen, Germany

Deltares

Can we use theoretical approaches from natural sediment to describe the transport behaviour of microplastics?
06/2021. Rivieren TeamDeltares, Delft, Netherlands

SCHOLARSHIPS

PhD Scholarship of the German Federal Environmental Foundation (DBU)

01/2018 - 12/2020

Financial and mentoring support of the PhD on the research topic „Transport behaviour of microplastics in the aquatic environment“

Travel Scholarship of the Indo-German Centre for Sustainability

11/2019

Travel grant for a one-month research stay in India to investigate the microplastic pollution of Indian rivers

MEMBERSHIPS

International Association for Hydro-Environment Engineering and Research (IAHR)

2026 - now

Assistant Professors in the Netherlands (APNet)

2023 - now

Scientists' Coalition for an Effective Plastics Treaty

2022 - now

European Geosciences Union (EGU)

2021 - now

Programme Committee of the Netherlands Centre for River Studies (NCR)

2021 - now

DIN-Committee to define microplastics

2021 - now

Technical Committee ‚Plastik im Boden‘

2021 - 2024

Association of Friends of the Institute of Hydraulic Engineering and Water Resources Management, RWTH Aachen University, Aachen, Germany

2020 - now

PROFESSIONAL DEVELOPMENT

Future Leaders Development Program (SPROUT) of WUR

09/2024-05/2025

Corporate leadership initiative for young talents, with workshops focused on personal leadership, team development and strategic growth
Wageningen University

University Teaching Certificate

09/2021-03/2023

Courses on: Brain-based teaching, (Re)designing a course, Assessment (written exams and graded assignments), Student supervision, Observational assignment, University teaching - putting theory into practice
Wageningen University

‘Professional in PhD Supervision’ course

04/2022

Course on all stages of PhD supervision
Wageningen University

Delft3D River Modelling course

03/2022

Deltares

Mentoring Program TANDEMplus of RWTH Aachen University

01/2021 - 01/2022

RWTH Aachen University

Gamification in teaching course; Project management course; Negotiation management course; The Scientist as a Manager course; Scientific Writing course; Collaborative interdisciplinary - Designing effective interdisciplinary collaborations

2017 - 2020

RWTH Aachen University

VOLUNTARY ACTIVITIES

FastResearch - Your Platform for Collaboration & Reproducibility

10/2020 - now

Founding member and scientific advisor
FastResearch wanted to improve collaboration on data sets and analyses to make them usable and reproducible for everyone. We wanted to enable researchers to work together by giving them a tool for collaborative coding and to make their data and analyses open access. On our platform, large amounts of data were supposed to be combined with extensive analyses and used either privately, partially publicly or completely publicly.

German Federal Environmental Foundation (DBU)

01/2018 - 12/2020

Speaker of the PhD scholarship holders
Communication between scholarship holders and the DBU as well as representation of the interests of the scholarship holders towards the DBU, organization and participation in the speaker meetings and the selection interviews of the new scholarship candidates

Pacific Garbage Screening e.V. (PGS, now Everwave)

08/2016 - 06/2019

Founding member of the non-profit association
*Participation in research, public relations and organization
The original idea of PGS was a functional architecture that passively filters plastic particles from the oceans. After further development, the current aim of PGS (now called Everwave) is to stop plastic from entering the oceans by implementing measures in rivers and public engagement.*

MONOGRAPHS

Transport Processes of Microplastic Particles in the Fluvial Environment: Erosion, Transport and Deposition

Waldschläger, K. (2020). *Dissertation*

Mikroplastik in der aquatischen Umwelt - Quellen, Senken und Transportpfade

Waldschläger, K. (2019).

Buchreihe: essentials, Springer Vieweg.

CHAPTERS IN BOOKS

Overcoming Oceans of Ignorance: What You Should Know About Plastic Waste Before It Enters the Sea.

Mellink, Y.; Schreyers, L.; Hauk, R.; Pinto, R.; Thi, K.; Waldschläger, K. & van Emmerik, T (2023). In: *Plastic Pollution in the Global Ocean* / Alice Horton (World Scientific)

Mikroplastik in der aquatischen Umwelt.

Waldschläger, K. (2022). In: *Wasser, Energie und Umwelt* / Porth, Markus, Schüttrumpf, Holger, Springer

Erosion Behaviour of Different Microplastic Particles.

Waldschläger, K. & Schüttrumpf, H. (2020). In: *Proceedings of the 2nd International Conference on Microplastic Pollution in the Mediterranean Sea* / Cocca, M., Di Pace, E., Errico, M.E., Gentile, G., Montarsolo, A., Mossotti, R., Avella, M., Springer Nature, Springer Water, doi: 10.1007/978-3-030-45909-3_51

Microplastics: What can we learn from clastic sediments?

Waldschläger, K. et al. (2023). In: *Proceedings of the 3rd International Conference on Microplastic Pollution in the Mediterranean Sea*

The vertical distribution of riverine microplastics: the role of turbulence.

Al-Zawaidah, H.; Vermeulen, B. & Waldschläger, K. (2023). In: *Proceedings of the 3rd International Conference on Microplastic Pollution in the Mediterranean Sea*

PEER-REVIEWED PAPERS I

Microplastic fibers as active agents in mud deposition.

Uguagliati, F.; Waqas, C.; Chassagne, C.; Waldschläger, K.; Zattin, M.; Ghinassi, M. (2026). *Scientific Reports*

Towards optimizing microplastic transport models through biofouling experiments.

van Grootheest, D.; Kooi, M.; Koelmans, AA.; Waldschläger, K. (2026). *Environmental Science & Technology*

A practical checklist for where, when, and what to measure - A systematic review of ten years of laboratory research on microplastic transport in rivers and transitional zones.

Al-Zawaidah, H.; Waldschläger, K. (2026). *Microplastics and Nanoplastics*

Microplastic fate driven by river water turbidity

Uguagliati, F.; Kozhaya, M.; Waldschläger, K.; Zattin, M.; Ghinassi, M. (2026). *Environmental Pollution*

Urban wash-off of tire wear particles

Hapich, H.; van Emmerik, THM.; Waldschläger, K.; Maurer, B.; Yang, Z.; Gray, AB.. (2026). *Journal of Hydrology*

Microplastic characterization and transport mode – A flow integrated approach to sampling urban waterways.

Murphy-Hagan, C.; Gray, AB.; Singh, S.; Hapich, H.; Cowger W.; Seeley, ME.; Waldschläger, K. (2025). *Environmental Research*

Opportunities and Challenges of a Cap-and-Trade System for Plastics.

Al-Zawaidah, H.; Kammerer, M.; Mitrano, DM.; Waldschläger, K. (2025). *Environmental Science and Technology*

Migrating subaqueous dunes capture clay flocs.

de Lange, Sl.; van der Wilk, A.; Chassagne, C.; Ali, W.; Born, M.; Brodersen, K.; Hoitink, AJF.; Waldschläger, K. (2024). *Communications Earth & Environment*

Dune Geometry and the Associated Hydraulic Roughness in the Fluvial to Tidal Transition Zone of the Fraser River at Low River Flow.

de Lange, S.; Bradley, R.; Schrijvershof, RA.; Murphy, D.; Waldschläger, K.; Kostaschuk, R.; Venditti, JG.; Hoitink, AJF. (2024). *Journal of Geophysical Research: Earth Surface*

Mapping Microplastic Movement: A Phase Diagram to Predict Nonbuoyant Microplastic Modes of Transport at the Particle Scale.

Al-Zawaidah, H.; Kooi, M.; Hoitink, T.; Vermeulen, B.; Waldschläger, K. (2024). *Environmental Science & Technology*

Fine Sediment in Mixed Sand-Silt Environments Impacts Bedform Geometry by Altering Sediment Mobility.

De Lange, Sl.; Niesten, I.; van de Veen, SHJ.; Baas, JH.; Lammers, J.; Waldschläger, K.; Boelee, D.; Hoitink, AJF. (2024). *Water Resources Research*

Optimizing microplastic polyethylene terephthalate fibre extraction from sediments: Tailoring a density-separation procedure for enhanced recovery and reliability.

Uguagliati, F.; Zattin, M.; Waldschläger, K.; Ghinassi, M. (2024). *Science of the Total Environment*

The Impact of Flocculation on In Situ and Ex Situ Particle Size Measurements by Laser Diffraction

De Lange, S.; Sehgal, D.; Martinez-Carreras, N.; Waldschläger, K.; Bense, V.; Hissler, C.; Hoitink, T. (2024). *Water Resources Research*

NON-PEER-REVIEWED PAPERS

Editorial: Plastics in aquatic systems: From transport and fate to impacts and management perspectives.

Waldschläger, K.; Miao, L.; Adyel, T.M. (2022). *Frontiers in Environmental Science*, Vol. 10

Mikroplastik weltweit - Die Belastung in Deutschland im internationalen Vergleich.

Waldschläger, K. & Lechthaler, S. (2020). *Wasser und Abfall*, Vol. 22 (5)

Mikroplastik in der aquatischen Umwelt.

Waldschläger, K. (2018). *Wasser und Abfall*

Reinigung der Meere von Plastik mit Pacific Garbage Screening.

Krebs, V.; Waldschläger, K. & Hansch, M. (2017). *Wasser und Abfall*, Vol. 19 (9)

REPORTS

Butt in the drain: The unwanted side-effects of a smoke-free campus.

Dannenburg, M.; Waldschläger, K.; de Bie, P.; van der Lugt, L. & Maters, E. (2022). *Wageningen University & Research*

PEER-REVIEWED PAPERS II

Terminal settling and rising velocity prediction of macroplastics: Medical face masks as newly emerged objects of concern

Born, M.; Junge, L.-V.; Waldschläger, K.; Brüll, C.; Schüttrumpf, H. (2024). *Science of the Total Environment*

Aquatic plastisphere: Interactions between plastics and biofilms

Yu, Y.; Miao, L.; Adyel, T.M.; Waldschläger, K.; Wu, J.; Hou, J. (2023). *Environmental Pollution*

Where should hydrology go? An early-career perspective of the next IAHS Scientific Decade: 2023-2032

van Hateren, T.C.: [...] Waldschläger, K.; Walraven, B.; Wannasin, C.; Wienhöfer, J.; Zander, M.; Zhang, S.; Zhou, J.; Zomer, JY.; Zwartendijk, BW. (2023). *Hydrological Sciences Journal*

Estimating floating macroplastic flux in the Santa Ana River, California

Cowger, W.; Gray, A.; Brownlee, S.; Hapich, H.; Deshpande, A.; Waldschläger, K. (2022). *Journal of Hydrology: Regional Studies*

Learning from natural sediments to tackle microplastics challenges: A multidisciplinary perspective

Waldschläger, K.; Brückner, M.Z.M.; Carney Almroth, B.; Hackney, C.R.; Adyel, T.M.; Alimi, O.S.; Belontz, S.L.; Cowger, W.; Doyle, D.; Gray, A.; Kane, I.; Kooi, M.; Kramer, M.; Lechthaler, S.; Michie, L.; Nordam, T.; Pohl, F.; Russell, C.; Thit, A.; Umar, W.; Valero, D.; Varrani, A.; Warrier, A.K.; Woodall, L.C.; Wu, N. (2022). *Earth-Science Reviews*

Will it float? Rising and settling velocities of common macroplastic foils

Kuizenga, B.; van Emmerik, T.; Waldschläger, K. & Kooi, M. (2022). *Environmental Science & Technology Water*

Rivers as plastic reservoirs

Van Emmerik, T.; Mellink, Y.; Hauk, R.; Waldschläger, K. & Schreyers, L. (2022). *Frontiers in Water*

Application of Laser-Induced, Deep UV Raman Spectroscopy and Artificial Intelligence in Real-Time Environmental Monitoring – Solutions and First Results

Post, C.; Brülisauer, S.; Waldschläger, K.; Hug, W.; Grüneis, L.; Heyden, N.; Schmor, S.; Förderer, A.; Reid, R.; Reid, M.; Bhartia, R.; Nguyen, Q.; Schüttrumpf, H. & Amann, F. (2021). *Sensors*

Baseline Study on Microplastics in Indian Rivers under Different Anthropogenic Influences

Lechthaler, S.; Waldschläger, K.; Sandhani, CG; Sannasiraj, SA; Sundar, V; Schüttrumpf, H. (2021). *Water*

Concentration Depth Profiles of Microplastic Particles in River Flow and Implications for Surface Sampling

Cowger, W.; Gray, AB; Guiling, JJ; Fong, B. & Waldschläger, K. (2021). *Environmental Science & Technology*

The Way of Macroplastic through the Environment (Review)

Lechthaler, S.; Waldschläger, K.; Stauch, G. & Schüttrumpf, H. (2020). *Environments MDPI*.

Settling and Rising Velocities of Environmentally Weathered Microplastic and Macroplastic Particles

Waldschläger, K.; Born, M.; Cowger, W.; Gray, A. & Schüttrumpf, H. (2020). *Environmental Research*.

PEER-REVIEWED PAPERS III

The Way of Microplastic through the Environment - Application of the Source-Pathway-Receptor Model (Review)

Waldschläger, K.; Lechthaler, S.; Stauch, G. & Schüttrumpf, H. (2020). Science of the Total Environment.

Infiltration Behaviour of Microplastic Particles with Different Densities, Sizes and Shapes - From Glass Spheres to Natural Sediment

Waldschläger, K. & Schüttrumpf, H. (2020). Environmental Science & Technology

Erosion Behaviour of different Microplastic Particles in Comparison to Natural Sediments.

Waldschläger, K. & Schüttrumpf, H. (2019). Environmental Science & Technology

Effects of Particle Properties on the Settling and Rising Velocities of Microplastics in Freshwater under Laboratory Conditions

Waldschläger, K. & Schüttrumpf, H. (2019). Environmental Science & Technology