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 WALDSCHLÄGER

Droevendaalsesteeg 3 - 6708 PB Wageningen
kryss.waldschlager@wur.nl
www.kryss-waldschlager.com
born 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 Macroplsatic 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 (Summa cum Laude)

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

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, Lappenranta-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 coorportation 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 ans 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

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.
Waldschlager, 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 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, SI.; 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, SI.; 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

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

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

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; Guilinger, 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.

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