Cleo Stratmann

ENVIRONMENTAL ENGINEER UND CONSULTANT

CONTACT

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SUMMARY

Cleo Stratmann is an accomplished environmental engineer with over 8 years of expertise in freshwater ecology, environmental plastic pollution, and interdisciplinary research. Her career is marked by a strong commitment to environmental conservation, water protection, and resolving plastic pollution issues through innovative solutions and impactful projects. Her experience spans water quality monitoring, technical installations, field and laboratory research, conceptual design, data management and analysis, strategic planning, project management, and regulatory compliance. She excels in methodological optimization, results dissemination, and successful collaboration management.

Throughout her career, Cleo has made significant contributions and led initiatives that directly benefited clients and stakeholders. Her research on freshwater microplastic pollution has played a crucial role in the development of harmonized sampling methods, data collection, and informing local stakeholders, including wastewater treatment management. Cleo has led capacity building initiatives for microplastic/plastic research and successfully coordinated large-scale water monitoring projects across European countries. She has also provided compliance support for the waste treatment industry with regulatory standards. Cleo is proficient in several professional programs and laboratory techniques for water and plastics investigation, data analysis, geographic information analysis, and other environmental engineering applications crucial for environmental assessments, data utilization, and environmental planning and consulting

EXPERIENCE

SEEO ENVIRONMENTAL CONSULTING

April 2024 - Present
Independent Environmental Engineer & Consultant

WATER, ENVIRONMENT AND URBAN SYSTEMS LAB (LEESU), ECOLE DES PONTS PARISTECH, FRANCE

Sept 2020 – Aug 2023
Early-stage researcher / MSCA PhD fellowship

DURCHBRUCH E.V., GERMANY

May 2020 – Aug 2020
Teaching Assistant

PROFESSIONAL REGISTRATIONS

Independent Environmental Engineer. Legally authorized to practice based on academic qualifications.

EDUCATION

Technische Universität Berlin, Germany

- MSc, Environmental Science and Technology, 2016
- BSc, Environmental Science and Technology, 2012

PROFESSIONAL AFFILIATIONS

Plastic Footprint Network (PFN)

German Freshwater Association

Scientists' Coalition for an Effective Plastics Treaty

Cluster Plastics and Chemistry Brandenburg

Scientific Environmental Engineering & Outreach

... EXPERIENCE

LEIBNIZ-INSTITUTE FOR FRESHWATER ECOLOGY AND INLAND FISHERIES, GERMANY

Sept 2019 – Feb 2020 | Sept 2019 – Feb 2020
Research assistant

NETHERLANDS INSTITUTE OF ECOLOGY, THE NETHERLAND

Aug 2017 – January 2019
Early-stage researcher

ENGINEERING OFFICE FOR CIRCULAR ECONOMY MANFRED KANTHAK, GERMANY

Jan 2014 – Dec 2016
Project Engineer (part-time)

EU FRESHPROJECT2.0 (EFFS) TENDER – PROJECT: URBAN ALGAE

June 2018 – May 2020
Project Manager (part-time, volunteer role)

PROJECT EXAMPLES

SCIENCE-BASED FRAMEWORK FOR PLASTIC POLLUTION ASSESSMENT, SWITZERLAND

As the Microplastic Working Group Co-Lead at the Plastic Footprint Network (PFN), Cleo contributed to developing a science-based framework aligned with the UN Plastics Treaty. This initiative enables organizations to set measurable targets for reducing plastic pollution by unifying methodologies scientists and industry experts. Cleo's responsibilities included coordinating the working group, reviewing scientific methodologies and literature, and conceptualizing microplastic systems maps and calculation routes. The PFN framework supports global efforts in marine-related sectors like shipping coatings and fishing gear, emphasizing transparency, accountability, and sustainable plastic management practices.

RESEARCH-INDUSTRY SUSTAINABILITY, GERMANY

In collaboration with Atrium Environmental, Cleo developed and presented an interactive map showcasing marine sustainability initiatives for research-industry collaboration at the Waterkant Festival in Kiel. The project focused on scientific and educational projects and provided content about marine plastic pollution, solutions, and sustainability topics. Cleo was responsible for concept development, planning, implementation, project selection, and presenting detailed project content to visitors.

ENVIRONMENTAL SCIENCE EDUCATION & PUBLIC OUTREACH, NORWAY

As manager of the plastics stand at "Store Barnes Fjæresdag" in collaboration with NTNU, Cleo engaged young audiences through interactive activities on plastic pollution. She communicated complex scientific concepts, fostering environmental awareness and promoting sustainable practices among children and adults.

LIMNOPLAST: RIVERINE MICROPLASTIC MONITORING AND STAKEHOLDER ENGAGEMENT, FRANCE

As an Early-Stage Researcher, Cleo led a three-year PhD project focused on riverine microplastic pollution in rural and urban environments, particularly in Paris. She developed a monitoring strategy and laboratory processes, harmonized microplastic sampling and extraction methodologies, and collaborated with stakeholders, including the Parisian wastewater treatment management. Cleo conducted extensive sampling and spectrometric analysis of microplastics using and water quality parameters, including conductivity, pH, temperature, and total suspended solids (TSS), generating valuable insights into riverine microplastic pollution. She managed various aspects of the research project, supervised a master's student and two interns, and participated in various training activities and workshops. Cleo's work resulted in scientific publications, reports, and presentations, significantly contributing to stakeholder engagement and advancing knowledge in the field.

WATER MASS BALANCES AND MICROPLASTIC MODELING, NETHERLANDS

During her stay as a Guest Researcher at Deltares, Cleo conducted research on water mass balances and hydrology, focusing on modeling and analyzing microplastic contamination in aquatic environments. She developed and validated models, analyzed data, and collaborated with international experts. This project provided valuable insights into the transport and fate of microplastics, essential for informing regulatory frameworks and sustainable water resource management strategies.

CURATING TOOLS FOR PLASTIC AND MICROPLASTIC RESEARCH, INTERNATIONAL

Co-developer of the Plastiverse platform, Cleo curated a comprehensive repository for plastic and microplastic research tools. Her leadership facilitated global collaboration among researchers, enhancing access to critical resources and advancing initiatives to combat plastic pollution worldwide.

MAPPING PLASTIC HOTSPOTS IN MARINE PROTECTED AREAS, CALIFORNIA, USA

Contributing expertise in microplastic research and GIS mapping, Cleo assessed plastic pollution hotspots in San Diego's Marine Protected Areas in the Scripps-Rady Ocean Plastic Pollution Challenge. She conducted detailed research on plastic accumulation in submerged aquatic vegetation and riverine plastic inflows, informing sustainable conservation strategies. Her analysis informed sustainable conservation strategies, culminating in recommendations and political amendment actions to mitigate plastic accumulation in critical marine environments.

URBAN ALGAE: ECOLOGICAL STATUS AND ECOSYSTEM SERVICES OF URBAN PONDS, EUROPE

Leading the European Federation for Freshwater Sciences (EFFS) FreshProject2.0 "Urban Algae," Cleo managed a low-budget collaborative research initiative across Europe. Her project management skills facilitated multi-national water sampling campaigns in 14 countries through coordinating 30 teams, and public outreach efforts, advancing knowledge of urban pond ecology and promoting sustainable environmental practices.

MANTEL: CLIMATE EXTREMES AND ECOSYSTEM SERVICES IN LAKES AND RESERVOIRS, NETHERLANDS

As an MSCA-ITN Fellow in the Horizon 2020 project Management of Climatic Extreme Events in Lakes and Reservoirs for the Protection of Ecosystem Services (MANTEL), Cleo conducted research on climate extremes in lakes and reservoirs at the Netherlands Institute of Ecology. She planned and executed micro- and mesocosm experiments, analyzed high-frequency data, and collaborated with experts on water quality. She conducted runoff experiments for extreme precipitation simulation and ran a three-week heatwave experiment on

sediment cores and carbon and phosphorous dynamics. Her work contributed to scientific publications and informed initiatives on ecosystem resilience.

ILLUMINATING LAKE ECOSYSTEMS (ILES), GERMANY

Participating in the Leibniz-Institute for Freshwater Ecology and Inland Fisheries-led ILES project, Cleo helped manage international teams in lake mesocosm experiments. She assisted in planning samplings and laboratory analyses, installed measurement instruments, and conducted water, zooplankton, and phytoplankton samplings. Her role included project coordination, providing critical insights into environmental challenges related to light pollution.

URBAN WATER INTERPHASES (UWI): STAKEHOLDER ENGAGEMENT AND FIELD MEASUREMENTS, GERMANY

Assisting PhD candidates at the Leibniz-Institute for Freshwater Ecology and Inland Fisheries, Cleo facilitated water sampling permissions and engaged with stakeholders like the Water and Shipping Administration. She provided technical support in field measurements and greenhouse gas analysis, contributing to understanding urban water interphases and environmental management.

MANAGING AQUATIC ECOSYSTEMS AND WATER RESOURCES UNDER MULTIPLE STRESS, GERMANY

Conducting her master's thesis within the project Managing Aquatic Ecosystems and Water Resources under Multiple Stress (MARS) at the Leibniz-Institute for Freshwater Ecology and Inland Fisheries, Cleo developed expertise in water analyses and ecology. She conducted enzyme kinetics and phytoplankton analyses, monitored lake water quality using probes and other equipment, and worked on technical water research installations in lakes. Cleo collaborated with international researchers and generated data on freshwater ecosystems. Her research provided valuable insights into mitigating environmental stressors and supporting sustainable water resource management.

WASTE FRACTION MATERIAL FLOW ANALYSIS, GERMANY

As a Project Engineer with the Engineering Office for Circular Economy Manfred Kanthak, Cleo conducted comprehensive material flow analyses of waste fractions and ensured regulatory compliance. She performed sampling, sorting, and analysis of various types of waste within German waste treatment facilities. Her work contributed to improved waste management practices and environmental sustainability initiatives.

SELECTED SCIENTIFIC PUBLICATIONS

Stratmann CN, Dris R, Gasperi J, Buschman FA, Markus AA, Guerin S, Vethaak AD and Tassin B (2024) Monitoring microplastics in the Seine River in the Greater Paris area. Front. Earth Sci. 12:1386547. doi: 10.3389/feart.2024.1386547

Feride Öykü Sefiloglu, Cleo N. Stratmann, Marthinus Brits, Martin J.M. van Velzen, Quinn Groenewoud, A. Dick Vethaak, Rachid Dris, Johnny Gasperi, Marja H. Lamoree (2024) Comparative microplastic analysis in urban waters using μ-FTIR and Py-GC-MS: A case study in Amsterdam, Environmental Pollution, Volume 351,124088, ISSN 0269-7491, https://doi.org/10.1016/j.envpol.2024.124088.

Rachid Dris, Max Beaurepaire, Nadia Bouzid, Cleo Stratmann, Minh Trang Nguyen, Frederique Bordignon, Johnny Gasperi, Bruno Tassin (2024) Chapter 3 - Sampling and analyzing microplastics in rivers: What methods are being used after a decade of research?, Editor(s): Eddy Y. Zeng, Microplastic Contamination in Aquatic

Environments (Second Edition), Elsevier, Pages 65-91, ISBN 9780443153327, https://doi.org/10.1016/B978-0-443-15332-7.00013-2.

Lyche Solheim, A., Gundersen, H., Mischke, U., Skjelbred, B., Nejstgaard, J. C., Guislain, A. L. N., Sperfeld, E., Giling, D. P., Haande, S., Ballot, A., Moe, S. J., Stephan, S., Walles, T. J. W., Jechow, A., Minguez, L., Ganzert, L., Hornick, T., Hansson, T. H., Stratmann, C. N. … Berger, S. A. (2024). Lake browning counteracts cyanobacteria responses to nutrients: Evidence from phytoplankton dynamics in large enclosure experiments and comprehensive observational data. *Global Change Biology*, 30, e17013. https://doi.org/10.1111/gcb.17013

Zhan, Q., Stratmann, C.N., van der Geest, H.G., Veraart, A. J., Brenzinger, K., Lürling, M., & de Senerpont Domis, L. N. (2021) Effectiveness of phosphorus control under extreme heatwaves: implications for sediment nutrient releases and greenhouse gas emissions. *Biogeochemistry* 156, 421–436. https://doi.org/10.1007/s10533-021-00854-z

Diaz-de-Quijano, Daniel, Stratmann Cleo N., Berger, Stella A., DIY enzyme labelled fluorescence alcohol (ELFA) standard production protocol to quantify single-cell phosphatase activity (SCPA) of microplankton (2020), Heliyon, Volume 6, Issue 11, e05582, doi: https://doi.org/10.1016/j.heliyon.2020.e05582

SELECTED WHITE PAPERS, OTHER PUBLICATIONS, AND PROJECT RESULTS

Stratmann, C. N., Dris, R., Gasperi, J., Molazadeh, M., Sefiloglu, F. Ö., Löder, M., Vollertsen, J., Leslie, H., & Tassin, B. (2022). Standard Operation Procedures (Sops) for Microplastic (MP) Sampling and Analysis (3.1). Zenodo. https://doi.org/10.5281/zenodo.6779408

Cleo Stratmann, Rachid Dris, Johnny Gasperi, Sabrina Guérin, Anthony Marconi, Sam Azimi, Vincent Rocher, Bruno Tassin (2022) Etude des microplastiques > 25 µm sur le bassin versant de la Seine, PIREN Seine annual report, https://doi.org/10.26047/PIREN.rapp.ann.2022.vol22

Marcos Felipe Rodriguez (2022) Mental Models of Microplastics, Editor: Cleo Stratmann, https://www.plastiverse.org/blog/mental-models-of-microplastics

Fadwa Bouhedda, Pilar Garcia, Jonathan Goodmacher, Julie V. Hopper, Adam Mihalik, William C. Quinn, Cleo N. Stratmann, Team Mentor: Sarah-Jeanne Royer, Scientific assistant: Patricia Lieberg Clark (2021) Identifying and Mapping Inputs and Hotspots of Plastic Waste into the Pacific Ocean and Marine Protected Areas in the San Diego Region in California, USA, White paper, Scripps-Rady Ocean Plastic Pollution Challenge, https://drive.google.com/file/d/16WreODuBPPb_OTDPPWvgkh-lg8tKSEsk/view

Cleo Stratmann, Sonia Herrero (2020) Urban Algae – Ecological status and the perception of ecosystem services of urban ponds, https://www.freshwatersciences.eu/public/files/UrbanAlgaeFinalreport_30-09-2020.pdf

Xavier Benito, Cleo Stratmann, Sonia Herrero, (2019) Women in Limnology: Exhibit by the Iberian Assocation of Limnology, https://blog.gleon.org/women-in-limnology-exhibit-by-the-iberian-assocation-of-limnology/

LANGUAGES

GERMAN (NATIVE)

ENGLISH (ADVANCED PROFICIENCY)

FRENCH (INTERMEDIATE PROFICIENCY)

SPANISH (BASIC PROFICIENCY)