

Nans Barthélémy

Current position: PhD candidate in functional ecology

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Research interests:

functional ecology; aquatic ecotoxicology; plastic pollution; non-perennial rivers; aquatic-terrestrial subsidies

Education & scientific experiences

- 2021/2024** **PhD in aquatic ecology (Lyon 1 University & National Institute of Ecological and Agricultural Research, France).**
Fate, Transport and Ecological consequences of microplastics in non-perennial watercourses.
Supervisors: Dr. Florian Mermillod-Blondin, Dr. Thibault Datry & Pr. Dr. Stefan Krause
- 2020/2021** **MSc Degree in Ecology Evolution & Genomic (2nd year, Lyon 1 University, France).**
Internship on "*Aquatic organic matter decomposition in terrestrial environment of non-perennial rivers*".
Supervisors: Dr. Thibault Datry & Dr. Romain Sarremejane
- 2019/2020** **MSc Degree in Biology Ecology & Evolution (1st year, Lyon 1 University, France).**
Internship on "*The establishment of the dispersal capacity of seeds of introduced species on the Kerguelen Islands*".
Supervisor: Prof. Dr. Anne-Kristel Bitterbiere (cancelled due to the COVID-19 pandemic)
- 2017/2019** **BSc Degree in Biodiversity Science (Lyon 1 University, France).**

Fieldwork experience and laboratory skills

Fieldwork

- **2020 Fieldwork coordinator** on an experimental project on aquatic organic matter decomposition by terrestrial consumers: organic matter mass loss analysis.
- **2020/2021 Fieldwork assistant** on the MetaDryNet project in the Albarine river catchment: macroinvertebrate sampling, leaf pack protocol.
- **2023 Fieldwork coordinator** on an experimental project on streambed microplastic assessment between perennial and intermittent reaches: planification, site selection and sampling.

Laboratory skills

- Microplastic extraction from environmental matrices
- μ -FTIR and fluorescence stereo microscope analysis for microplastic characterization
- Extraction and assay of triglyceride content in gammarids
- Conducting microcosm experiment with live organisms (gammarids)

Communications

Scientific publications in peer-reviewed journals:

- **Barthélémy, N.**, Sarremejane, R., Datry, T., 2022. Aquatic organic matter decomposition in the terrestrial environments of an intermittent headwater stream. *Aquatic Science*. 84, 45. <https://doi.org/10.1007/s00027-022-00878-z>
- Sarremejane, R., Silverthorn, T., Arbaretaz, A., Truchy, A., **Barthélémy, N.**, López-Rojo, N., Foulquier, A., Simon, L., Pella, H., Singer, G., Datry, T., 2024. Drying and fragmentation drive the dynamics of resources, consumers and ecosystem functions across aquatic-terrestrial habitats in a river network. *Oikos* n/a, e10135. <https://doi.org/10.1111/oik.10135>
- Wazne, M., Mermillod-Blondin, F., Vallier, M., Krause, S., **Barthélémy, N.**, Simon, L., 2024. Optimization of glass separating funnels to facilitate microplastic extraction from sediments. *Methods X* 12. <https://doi.org/10.1016/j.mex.2023.102540>
- **Barthelemy, N.**, Mermillod-Blondin, F., Krause, S., Simon, L., Mimeau, L., Devers, A., Vidal, J.-P., Datry, T., 2024. The Duration of Dry Events Promotes PVC Film Fragmentation in Intermittent Rivers. *Environmental Science & Technology* <https://doi.org/10.1021/acs.est.4c00528>
- **Barthelemy, N.**, Mermillod-Blondin, F., Krause, S., Simon, L., Wazne M., Hervant F., Chaumot A., Espeyte A., Datry T. Increased assimilation efficiency and mortality rate in *Gammarus fossarum* following PVC microplastics exposure. <https://doi.org/10.1016/j.envpol.2025.126029>

In review:

- NAVA V., ABBASI M., ADEKOLUREJO O., AURICH P., **BARTHELEMY N.**, BICK B., BURRI B., CABRERIZO M., CAIROLA G., CHONOVA T., COUR M., DE SANTIS V., DORY F., DROST A., FATRAS B., FELHINGER L., FIGLER A., HALABOWSKY D., HARVEY D., JAKOBSSON E., MISTELI B., MORI-BAZZANO L., MOSSER V., PASQUALINI J., ROTTA F., SCHMID-PAECH B., TOUCHET C., VAZIOURAKIS K., MANZANARES-VAZQUEZ V., YOUSUF D., GOSTYNSKA J. Continental-scale patterns in the colonization of plastic debris by primary producers across lakes. In review in *Nature Communications*

Oral communications:

- **Barthelemy, N.**, Datry, T., Mermillod-Blondin, F., Krause, S., Simon, L. Fate, transport and ecological consequences of microplastics in non-perennial streams. *SEFS 13 | Symposium for European Freshwater Sciences* (2023).
- **Barthelemy, N.**, Mermillod-Blondin, F., Krause, S., Datry, T. Plastic film fragmentation under simulated intermittent regimes. *Journée des Thèses de l'Unité RiverLy* (2023).

Communications displayed:

- **Barthelemy, N.**, Datry, T., Mermillod-Blondin, F., Krause, S., Simon, L. Effects of drying on plastic fragmentation and microplastic size on the functional role of a shredder organism *Gammarus fossarum*. *SFE² | International Conference on Ecological Sciences "Ecology and Evolution"* (2024).
- **Barthelemy, N.**, Mermillod-Blondin, F., Krause, S., Simon, L., Mimeau, L., Devers, A., Vidal, J.-P., Datry, T. Flow intermittence, a factor to consider in the fragmentation of plastic in the environment. *Journée annuelles H₂O'Lyon* (2024).

Scientific vulgarization:

- Romain Sarremejane R., Silverthorn T., **Barthelemy N.**, Jans M., Truchy A., López-Rojo N., Foulquier A., Datry T. Where does carbon go when a river dries? Insights from across the channel. *Freshwater Biological Association News N°87* (2023).
- Participation in several scientific animations for the general public in 2022 and 2023.