Lisa Nicvert *PhD in statistical ecology*

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Education

2020 - 2024 **PhD in statistical ecology**
Supervision: Stéphane Dray and Hervé Fritz
Laboratory of Biometry and Evolutionary Biology, Villeurbanne (France)
Statistical methods and software tools to analyze and infer ecological networks and process multi-species data *(CC-BY 4.0)*
Point processes models applied to community data | Developments in multivariate analyses for niche modeling | Package development with R

2019 - 2020 **MSc "Ecology, Evolution, genomics"**
University Claude Bernard Lyon 1, Villeurbanne (France)
Fundamental concepts in ecology | Ecosystem functioning | Evolutionary ecology

2017 - 2020 **Master of Engineering "Bioinformatics and modeling"**
INSA Lyon, Villeurbanne (France)
Inferential statistics | R and Python programming | Machine learning

Professional experiences

November 2024 - present **Post-doctoral fellowship in conservation ecology**
Principal investigators: Colin Fontaine and Reto Schmucki
FRB-Cesab, Montpellier (France)
DRAGON project — Dragonflies as bellwether for the human impact on interface ecosystems
Spatio-temporal occupancy modelling | Data harmonization pipeline (>10 million occurrences) | Animation of an international research consortium

2020 - 2023 **Complementary teaching activity**
University Claude Bernard Lyon 1, Villeurbanne (France)
Teaching in statistics and R programming at an undergraduate level (64 hours a year) in addition to my PhD.

January - June 2020 **Research internship in statistical ecology**
Supervision: Stéphane Dray and Hervé Fritz
Laboratory of Biometry and Evolutionary Biology, Villeurbanne (France)
Inference and analysis of African mammals co-occurrence networks from camera trap data. Analysis and cleaning of large datasets with R, African community ecology.

May - August 2019 **Bioinformatics engineering internship**
Supervision: Cyrielle Gasc
MaaT Pharma, Lyon (France)
Design and creation of a database (PostgreSQL) and development of a web application for visualization and analysis of metagenomics data (R Shiny).

Software development

{camtrapviz} **Nicvert, L.** Shiny web application for interactive and reproducible visualization of camera trap data (2024).
Link | Source code

{standardizeSnapshot} **Nicvert, L.**, Huebner, S. & Pardo, L. R package for homogenising data from the Snapshot Safari program.
Link | Source code

Key competencies

Statistics & modelling

- Probabilistic modelling
- Point process models
- Multivariate methods
- Occupancy modelling
- Bayesian inference (stan, jags)
- Machine learning
- Deep learning (notions)
- Causal inference (notions)

Programming

- R and Python
- Spatial analyses with R (terra, sf)
- SQL (PostgreSQL databases)
- Quarto, Markdown, LaTeX
- Unix command line

Open science & reproducibility

- Version control with Git
- Containerization with Docker
- Unit testing in R and Python
- Rights and licensing (notions)

Publications & conferences

Published articles

Nicvert, L., Bowler, D. E., Bried, J. T., Coulon, A., De Knijf, G., van Grunsven, R. H. A., Engel, T., Jeanmougin, M., Fontaine, C., & Schmucki, R. (2026). Linking species traits and conservation indicators in European odonates. *Biological Conservation*.

Beck, M., Annasawmy, P., Birre, D., Busana, M., Casajus, N., Coux, C., Marino, C., Mouquet, N., **Nicvert, L.**, Oliveira, B. F., Petit-Cailleux, C., Tortosa, A., Unkule, M., Vagnon, C., & Veytia, D. (*in revision in Bioscience*) Strategic citations for a fairer academic landscape. *bioRxiv*. https://doi.org/10.1101/2025.08.06.668908

Nicvert, L., Fritz, H., & Dray, S. (2025). Trait matching without traits: Using correspondence analysis to investigate the latent structure of interaction networks. *Peer Community Journal*, 5. https://doi.org/10.24072/pcjournal.580

Nicvert, L., Donnet, S., Keith, M., Peel, M., Somers, M. J., Swanepoel, L. H., Venter, J., Fritz, H., & Dray, S. (2024). Using the multivariate Hawkes process to study interactions between multiple species from camera trap data. *Ecology*, *105*(4), e4237. https://doi.org/10.1002/ecy.4237

Articles in preparation

De Knijf, G., Bried, J., Engel, T., Jeanmougin, M., Fontaine, C., Schmucki, R., & **Nicvert, L.** (*in revision in Scientific Data*). OdonTraits Europe. A comprehensive traits dataset for European dragonflies and damselflies.

Nicvert, L., Fritz, H., & Dray, S. (*in prep.)* Analyzing trait matching and interaction niches in ecological networks using constrained correspondence analyses.

Oral presentations & posters

Nicvert, L., Bowler, D. E., Bried, J. T., Coulon, A., De Knijf, G., van Grunsven, R. H. A., Engel, T., Jeanmougin, M., Fontaine, C., & Schmucki, R. (2025). Linking conservation status and species traits: a case study on European dragonflies. *Ecology & Behaviour, Montpellier.* https://www.youtube.com/live/zhczd4r5vCk?t=10037s

Nicvert L., Fritz H. & Dray S. (2023). Camtrapviz, Camtrapviz, a Shiny interface to visualize camera trap pictures [French]. *Rencontres R, Avignon.* https://www.youtube.com/watch?v=5qL-vUkrvr0

Nicvert, L., Donnet, S., Fritz, H., & Dray, S. (2022). A point process to infer spatio-temporal interactions from camera trap data. *ISEC, Cape Town.* https://lbbe-box.univ-lyon1.fr/f/8dd84459056f441d8d1e/

Other academic activities

January 2026 - present
Associate data editor
Proceedings of the Royal Society B (remotely)
Ensuring that code and data accompanying manuscripts are open and accessible.

December 2025 - present
SORTEE conference committee member
Society for Open, Reliable, and Transparent Ecology and Evolutionary Biology(remotely)
Co-organisation of the annual virtual SORTEE conference.

April 2025 - February 2026
Co-animation of lab meetings
FRB-Cesab, Montpellier (France)
Facilitation and planning for the laboratory's bi-monthly meetings.

April - June 2025
Co-supervision of an undergraduate internship
Montpellier (France)
Thomas Michel-Paludan's internship on the statistical analysis of biases in the French opportunistic data of odonates occurrences.

2022-2024
Participation in the “Quality of Life in the Laboratory” group
Laboratory of Biometry and Evolutionary Biology, Villeurbanne (France)
Discussions and decisions about community life in the laboratory (e.g., preparation and analysis of a questionnaire on doctoral students' well-being).

2022
Co-organization of the post-PhD seminar
Laboratory of Biometry and Evolutionary Biology, Villeurbanne (France)
Taking part in planning a day of presentations on post-doctoral prospects for PhD students in the laboratory: contacting speakers, logistics, facilitating the seminar.

2021-2022
PhD students representative
Laboratory of Biometry and Evolutionary Biology, Villeurbanne (France)
Representation of doctoral students at bi-monthly laboratory meetings.

Scientific popularisation

2025
Pint Of Science organization team
Montpellier (France)
Co-organization of three evenings for the Pint Of Science festival

6-7 April 2024
Scientific game jam
Lyon (France)
Creation of a video game with a team of developers and graphic designers about plant-frugivore interactions over a weekend (game available here).

2020 - 2022
Volunteering with the Projet Pangolin association
Remotely
Scientific popularization in ecology: writing of popular-science articles, scientific illustration, workshops facilitation with schoolchildren and high school students.

2022
BARCamp
Sciences University Library La Doua, Villeurbanne (France)
Oral popularization presentation about my PhD subject organized by the University Library (available here).

2021
Décrypthèse conference
E2M2 Doctoral Scool, Villeurbanne (France)
Oral presentation for the general public by doctoral students from the E2M2 doctoral school.

Languages

- Fluent French (native language)
- Advanced English *(C1 level, TOEIC)*, 6 months exchange in Aberdeen (Scotland) in 2019
- Upper-intermediate German *(B2 level)*

Hobbies

- Drawing (digital, watercolour)
- Reading (science fiction)
- Naturalist observations (birding, odonatology)