

ALEXANDRE CHANGENET

PhD student in Forest Ecology

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POSITIONS

PhD student (current)

Lab. Biodiversité Gènes Communautés (UMR INRAE-UB)

📅 October 2017 – February 2021 📍 Bordeaux, France

Assessing range-wide mortality and recruitment sensitivity to climate in European trees using National Forest Inventories

- Spatial patterns and underlying drivers of background and die-off mortality in Europe
- Spatial patterns and main interactions modifying recruitment along the leading edge, trailing edge and core of the species range
- Drivers of recruitment in the invasive species *Quercus rubra* and *Robinia pseudoacacia*

EDUCATION

🎓 MSc degree, History, philosophy and didactic of sciences

📅 2016 – 2017 📍 Montpellier University of Sciences

🎓 MSc degree, Biology Ecology and Evolution

📅 2014 – 2016 📍 Toulouse Paul Sabatier University

- Master thesis (Supervised by Lounès Chikhi)

Lab. Evolution et Diversité Biologique & Instituto Gulbenkian de Ciência

📅 2015 – 2016 (6 month) 📍 Toulouse & Lisbonne

- Estimate demographic parameters from genomics data: Validation and application to real data (Lemurs species)
- Robustness test of a population genetics methods to estimate demographic parameters

- Master internship (Supervised by Alexander Singer)

Department of ecological Modelling, Helmholtz zentrum

📅 2015 (3 month) 📍 Leipzig, Germany

- Evolution and adaptation of density-dependent dispersal through intraspecific competition during climate change

🎓 BSc degree, Organisms and Population Biology

📅 2011 – 2014 📍 Montpellier University of Sciences

- Bachelor internship (Supervised by Andrew Beckerman)

Beckerman Lab., Department of Animal & Plant Sciences

📅 2014 (1 month) 📍 University of Sheffield

- Maladaptation genetics of stickleback insects and their impact on plant-arthropod community dynamics

SCIENTIFIC INTERESTS

Forest ecology Demography
Evolution Biological invasion
Epistemology

SKILLS

R Unix Python:numpy Git
Rangeshifter RMarkdown Structure
Geneious Bottleneck \LaTeX

Mixed models Parallel Raster
Multivariate analysis R2OpenBugs

OTHER TRAINING

Sensibility analysis, metamodelisation and complex model optimisation

MEXICO Summer School (28h)

📅 2018 📍 La Rochelle, France

Bayesian statistics

Training (21h)

📅 2018 📍 Bordeaux, France

Gulbekian training programme in bioinformatics : Genomic and transcriptomic data analysis

PhD program of IGC (20h)

📅 2016 📍 Oeiras, Portugal

LANGUAGES

French (mother tongue) ●●●●●

English (C1) ●●●●●

REFEREES

Dr. Benito Garzón Marta (PhD supervisor)

✉ marta.benito@gmail.com

📍 Lab. Biogeco, Bordeaux University

Dr. Porte Annabel (PhD supervisor)

✉ annabel.porte@u-bordeaux.fr

📍 Lab. Biogeco, Bordeaux University

PUBLICATIONS AND COMMUNICATIONS

Peer-reviewed articles

- **Changenet A**, Ruiz-Benito P, Ratcliffe S, Fréjaville T, Archambeau J, Porte AJ, Zavala MA, Dahlgren J, Lehtonen A, Benito Garzón M. "Occurrence but not intensity of mortality rises towards the climatic trailing edge of tree species ranges in European forests". *Global Ecology and Biogeography* (in press)
- Archambeau J, Ruiz-Benito P, Ratcliffe S, Fréjaville T, **Changenet A**, Muñoz Castañeda JM, Lehtonen A, Dahlgren J, Zavala MA, Benito Garzón M (2020). "Similar patterns of background mortality across Europe are mostly driven by drought in European beech and a combination of drought and competition in Scots pine". *Agricultural and Forest Meteorology*. <https://doi.org/10.1016/j.agrformet.2019.107772>

Preprints available on BioRxiv

- **Changenet A**, Ruiz-Benito P, Ratcliffe S, Fréjaville T, Archambeau J, Porte AJ, Zavala MA, Dahlgren J, Lehtonen A, Benito Garzón M. "Occurrence but not intensity of mortality rises towards the climatic trailing edge of tree species ranges in European forests". <https://doi.org/10.1101/2020.10.30.362087>

Manuscripts in preparation

- **Changenet A**, Ruiz-Benito P, Ratcliffe S, Fréjaville T, Porte AJ, Zavala MA, Dahlgren J, Lehtonen A, Benito Garzón M. "Competition limits more tree recruitment than drought in European forests."
- **Changenet A**, Benito Garzón M, Ruiz-Benito P, Ratcliffe S, Zavala MA, Dahlgren J, Lehtonen A, Porte AJ. "Quantification of invasive species range expansion from National forest inventories data."

Communications

- **GENTREE conference: Genetics to the rescue: managing forests sustainably in a changing world** – 2020, Avignon, France: Drought-induced mortality is mostly found at the trailing edge of tree species ranges in European forests. (**Talk**)
- **Models in Ecology and Evolution** – 2019, Montpellier, France: "European forest tree mortality is mostly driven by drought" (**Talk**)

TEACHING

Scientific teaching 2018-2020

- "Statistics for biology and ecology" 3rd year B.Sc students and 1st year M.Sc students (56h)
- "Clustering methods" 2nd year M.Sc students (2h)
- "Intellectual self defense and ideological intrusion in evolutionary biology" 1st and 2nd year M.Sc students (4h)

Associative teaching 2015-2021

Collectif de Recherche Transdisciplinaire en Esprit Critique et Science (Cortecs)

- "How to teach critical thinking" Secondary school teachers training (2 x 8h in 2018, 2019, 2020)
- "Scientific method and intellectual self defense" Communication for high-school students (2019)
- "Mathematical self-defence for non-mathematicians" Grenoble University Ph.D training (6h, 2019)
- "Media and critical thinking" Mediatheque of la Teste du Buche (2018)