



## Postdoctoral position in Thermal Ecology and Conservation Biology

*Institut des Sciences de l'Écologie et de l'Environnement, iEES Paris, Sorbonne Université*



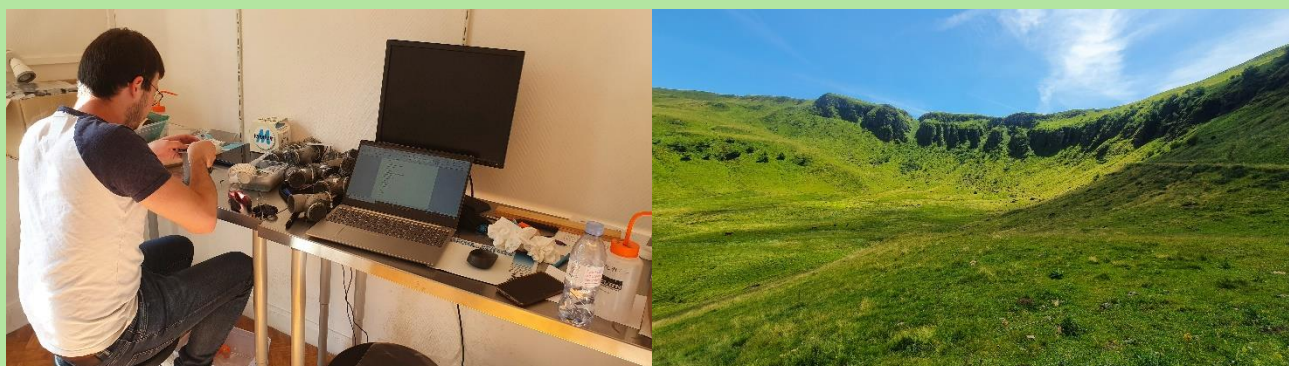
We are seeking a candidate for the project "**Thermal Ecology for Conservation: Considering Microclimates in Risk Analysis and Solution Evaluation**" selected as part of the Sorbonne University "SOUND" call for post-doctoral contracts. The project is open to young researchers who have defended their thesis less than 3 years ago at the time of application. The application deadline is May 5. The selected candidate will be interviewed by the program's scientific committee before June 2, 2025, for a 2-year contract to start before December 31, 2025. The project will involve collaborations with nature conservancy associations and a scientific mediation action with associated training from the University program.

### Description

Habitat loss and climate change are two existential threats to biodiversity, and addressing them together is a major goal in conservation biology. The effects of land-use change and climate warming are expected to act in concert. However, delineating their individual and interactive effects remains challenging, creating uncertainty in our understanding of the causes of extinction and how to address them. One approach to studying these joint effects is to treat them as factors that jointly alter the **bioclimatic habitability of the environment**. This research and outreach project proposes to follow this approach by focusing on **analyzing microclimatic terrestrial landscapes at different spatial scales, from the home range occupied by an individual to the global distribution of a species**. Microclimate describes the conditions surrounding living organisms and should summarize the joint effects of land use and climate change on a species' bioclimatic niche. The analysis of microclimatic conditions is also relevant for developing nature-based solutions to restore the "microclimatic quality" of natural habitats. Despite many recent methodological advances in the measurement and analysis of microclimatic data, this approach remains underutilized in conservation biology.



We will conduct a microclimate analysis at three spatial scales to characterize climatic habitability for a terrestrial lizard. Ectotherms exhibit behavioral thermoregulation that makes them dependent on external conditions for temperature regulation. Recent work on their thermoregulation and vulnerability to climate change clearly indicates the relevance of a microclimate-based approach. Here, we propose to go further by using **microclimates to describe the joint effects of habitat modifications and climate change at a local and then global scale**. In parallel, we propose to analyze the impact of **microhabitat management and restoration actions on bioclimatic quality at a regional scale**. We will compare nature-based restoration methods or the installation of artificial shelters.



### Research activities

Our study model is the viviparous lizard, *Zootoca vivipara* (Lichenstein 1823), a small terrestrial lizard with a generalist distribution confined to cold and humid natural environments throughout Eurasia. The project will analyze in a first axis the determinants of the global geographical distribution of the species by integrating macroclimate, land use and microclimate using remote sensing data and microclimate modeling. In a second axis, we will carry out a microclimatic analysis in two regions for which we have long-term data, namely the Landes triangle and the Massif Central. We will use in this perspective local information concerning the microclimate and vegetation, the abundance of lizard populations and the management or restoration mode of wetlands, in particular the Landes lagoons and the peat bogs of the Massif Central. Finally, in a third axis, we will analyze at the scale of the vital domain the impact of artificial shelters, a controversial measure for adaptation to climate change. This work will be based on a synthesis of the state of the art concerning the bioclimatic design of artificial shelters and their usefulness in a context of global warming. Experiments on the subject will be possible at CEREEP-Ecotron IleDeFrance depending on the skills and projects of the candidate.

### Requirements

The candidate must have a doctorate in ecology and/or conservation biology combined with knowledge of climatology and a strong interest in applied research in collaboration with non-academic partners. The thesis defense must be less than 3 years old at the time of application.



### Terms and salary

The selected candidate will be recruited at the iEES Paris laboratory in the VPA team under the responsibility of **Jean-François Le Galliard** (<https://lizardecology.org/>). The project will be carried out with a scientific consortium and in collaboration with the Société Herpétologique de France and with Cistude Nature, which is leading the “Sentinelles du climat” research and conservation program, of which the viviparous lizard is a part. These two associations will support us in the design of protocols, the assembly of data, the contact with managers, the organization of working meetings and the valorization through communication to the general public. The contract duration is two years with a start date no later than December 2025 and the salary conditions of the university (approximately €2,900 gross monthly).

### How to apply?

Interested candidates should contact Jean-François Le Galliard ([galliard@biologie.ens.fr](mailto:galliard@biologie.ens.fr)) with a cover letter, a complete CV, and letters of recommendation. Selected candidates will then be invited to submit their application on the dedicated platform of the Sorbonne University SOUND program (<https://www.sorbonne-universite.fr/actualites/2e-appel-projets-doctoraux-et-post-doctoraux-sound>).