MASTER'S INTERNSHIP: invasive species ecology and management

Project: XENOGREEN
Supervisor: Alain Pagano, Cedric Kosciolek
Host Laboratory: BIODIVAG Laboratory, University of Angers, France

Summary

Invasive alien species (IAS) are among the main drivers of the current biodiversity crisis. These species have significant negative impacts on both ecosystems and human activities, making their management a priority for many countries. To better define management and restoration strategies for natural habitats, in-depth research on the ecology and ecosystem effects of IAS is essential. Among these species, the African clawed frog (*Xenopus laevis*), native to southern Africa, has been introduced to several countries and is listed as a species of concern by the European Union. In France, its presence has been recorded since the 1980s, and it is now widespread in several departments. Despite its long-term establishment, the ecology of this species remains poorly understood, particularly regarding its ecological niche (regarding habitat use) and its impact on native species. Such knowledge is crucial for identifying high-risk habitats and developing effective management strategies. This study aims to improve understanding of habitat use by the African clawed frog in the Maine-et-Loire region and to assess its potential impacts on native amphibians. To achieve this, various types of aquatic habitats (natural and artificial ponds, small lakes, etc.) will be studied. Several parameters will be measured at each sampling site:

- Various physico-chemical data to characterize the sites.
- Estimation of *Xenopus laevis* density using funnel traps.
- Night acoustic and visual surveys to identify native amphibian species.
- Landscape data analysis using QGIS software.

This project will therefore contribute to a better understanding of the biotic and abiotic factors influencing the distribution and density of the African clawed frog in western France.

Intern's Tasks

- Conduct fieldwork to collect environmental data.
- Participate in amphibian surveys during night field sessions.
- Set and retrieve traps at sampling sites.
- Perform ecological niche modeling.

Note: A large portion of the fieldwork will take place at night. The intern may also participate, if interested, in other ongoing experiments related to the XENOGREEN project (e.g., electrofishing, tadpole experiments in the laboratory, sampling of pathogens).
Languages spoken in the laboratory: English and French

Required Skills

- Ability to work independently and take initiative.
- Accuracy and attention to detail in data collection.
- Experience with R (statistical analysis) and QGIS (spatial modeling) required.
- Knowledge of amphibian biology is an asset but not mandatory.
- Driver's license preferred.
- Good level of English (or French).

Duration and Conditions

- **Duration:** 6 months (starting February or March 2026)
- **Internship allowance:** According to current French regulations.

If you are interested, please send a **CV** and a **one-page motivation letter** (both in PDF format) by email to **Cédric Kosciolek** at *cedric.kosciolek@etud.univ-angers.fr*.