TERRA-MED PhD PROGRAM - Marie Skłodowska-Curie Actions

Context on the program

TERRA-MED is an interregional doctoral program funded under the Marie Skłodowska-Curie COFUND Actions that will recruit and train a new generation of researchers to address the sustainability and resource stress (Water–Land–Energy nexus) in Mediterranean territories.



The Euroregion Pyrenees–Mediterranean, coordinator of the program, brings together the Regions of Occitanie (France), Catalonia and the Balearic Islands (Spain) forming a cross-border research ecosystem. Through this collaboration, TERRA-MED connects world-class universities, research centres and socio-economic actors committed to advancing resilience in the face of climate change. With more than 22,000 scientists across 10 universities and 2 research centers, encompassing 1000 research units, TERRA-MED provides a rich, interdisciplinary environment where doctoral candidates can excel and launch their research careers.

33 PhD positions will be offered to early-stage researchers with a unique interregional, interdisciplinary and intersectoral environment.

Fellows will benefit from having two supervisors (a principal supervisor and a co-supervisor) from two different regions and having a non-academic mentor. The fellows will undertake mandatory cross-border or international stays to the co-institution, as well as a secondment in a non-academic entity.

Moreover, doctoral candidates will receive a specifically designed training program related to their research topics, alongside modules on innovation, entrepreneurship, project management, ethics, open science, etc.

Benefits of TERRA-MED PhD program

- Top-tier PhD education and research training
- Access to world-class laboratories
- Interregional double supervision
- Double PhD degree (France / Spain) where applicable
- Interdisciplinary and cross-sector research experience
- Unique TERRA-MED's excellence training program on resources stress and climate change. See here
- Attractive salary in the frame of MSCA standards
- Extensive network of academic and non-academic partners
- 2 secondments: 1 in the co-supervisor's institution (9 to 12 months); 1 in a non-academic organization to gain extra academic experience and skills (3 to 6 months)

<table>
<tr><td>Reference of the thesis project:
UVIC-UCC1</td><td colspan="2">Title of the thesis project
Glass Eels on the Edge: Climate Change Impacts an Endangered Species Across Contrasted Thermic Habitats</td></tr>
<tr><td colspan="2">Host institution:
Universitat de Vic – Universitat Central de Catalunya, Centre d'Estudis dels Rius Mediterranis (CERM-UVIC-UCC)</td><td>Co-supervision / co-host institution:
Centre de Recherches Insulaires et Observatoire de l'Environnement – Université de Perpignan Via Domitia (CRIOBE-UPVD)</td></tr>
<tr><td colspan="2">Country
Catalonia - Spain</td><td>Country
France</td></tr>
<tr><td colspan="2">Host Research Unit:
Centre d'Estudis dels Rius Mediterranis (CERM-UVIC-UCC) has nationally and internationally recognized expertise in the biology and ecology of aquatic organisms, with a particular focus on eels. This partner will be responsible for field sampling and experimental work, including thermal stress and behavioral tests, in both temperate and tropical regions.

CERM-UVic (Catalonia, Spain) and CRIOBE-UPVD (France) have been collaborating for several years, establishing a strong scientific partnership that will support the proposed research. This ongoing collaboration provides access to a broad range of habitats, with three study sites planned in each region. The inclusion of diverse habitats and species will strengthen the results obtained in the Mediterranean and broaden the scientific scope and impact of the PhD thesis.</td><td>Co-host Research Unit:
CRIOBE-UPVD has strong expertise in fish metabolomics and is equipped with advanced facilities for NMR and LC-HRMS analyses and will perform gene expression analysis. Moreover, the CRIOBE experimental station in Moorea, French Polynesia, enables the sampling and experiment on a tropical species which will reinforce the results obtained in the Mediterranean and enhance the scientific reach of the PhD thesis.</td></tr>
<tr><td colspan="2">Name of the first co-supervisor
Marc Ordeix Rigo
Email contact: marc.ordeix@uvic.cat</td><td>Name of the second co-supervisor
Nathalie Tapissier
Email contact: nathalie.tapissier@univ-perp.fr</td></tr>
<tr><td colspan="2">Doctoral School:
UVic-UCC Doctoral College
oficina.doctorat@uvic.cat</td><td>Doctoral School:
ED 305 Énergie et Environnement (UPVD)
E-mail : ed305@univ-perp.fr</td></tr>
<tr><td colspan="3">Research field(s)
Experimental and mixed method. Biological aspects of environmental change, including climate change, Metabolomics, Transcriptomics, and Biostatistics</td></tr>
</table>

Keywords

Climate change - Thermal tolerance - Endangered species – Glass eels - Habitat quality – Integrative approach

Description of the research project

Context and Rationale:

The proposed PhD project is aligned with the principles of the WEFE Nexus, integrating key interactions between water and land in the context of climate change.

Temperature increases driven by global change are widely recognized as a key factor influencing aquatic ecosystem alterations. The effects of rising temperatures on animal physiology, particularly in ectotherm species, such as fish, are well documented. Physiological traits are highly influenced by temperature, and elevated temperatures can lead to functional failure and ultimately to individual death if thermal limits are exceeded.

Beyond its critically endangered status, the eel constitutes a particularly relevant model species due to its extensive geographical distribution and panmictic population structure, which limits transgenerational adaptation to local environmental conditions. Consequently, projected increases in water temperature are expected to significantly modify, or potentially reduce, its distribution range. Furthermore, the effects of thermal stress and associated energetic costs on organism physiology may interact negatively with other anthropogenic stressors, such as habitat loss, pollution, and invasive species.

Objectives:

The present project aims to investigate the effects of a realistic increase in water temperature (e.g. 2 to 5 degrees according to IPCC predictions) on glass eel physiology and associated behavioral alterations. Such changes may ultimately reduce migration performance, alter the capacity to colonize diverse marine and continental habitats, and compromise survival.

The project focuses primarily on the regional / mediterranean area of European Eel habitat. However, this species has a pan European repartition, and the results could be of interest for other EU countries. Finally, the comparison with a tropical species will enlarge the scope of the PhD to a global scale.

Expected Results:

This PhD project addresses two key questions:

1- How will warming temperatures affect the physiological and behavioral traits of European glass eels (*Anguilla anguilla*) inhabiting contrasting Mediterranean environments?
2- How do these responses compare with those of glass eels from the tropical marbled eel (*A. marmorata*)?

This comparison will allow us to determine whether temperate species exposed to variable thermal conditions are more or less sensitive to warming than those inhabiting more stable tropical environments. Indeed, a moderate temperature increase may represent a relatively small shift for species already living in warm tropical environments, potentially reducing their sensitivity to warming. Conversely, if such species already live close to their upper thermal limits, even a slight increase in temperature may have severe physiological impacts.

Work plan:

Temperate glass eels will be collected in Catalonia-Spain and France targeting contrasting habitats (e.g., lagoons, rivers, and gradients of temperature and pollution) to assess how initial environmental conditions influence responses to thermal stress. Study sites will be selected based on data from the AnguillaMed POCTEFA project (2024–2027), involving the same partners.
Tropical glass eels will be collected in Moorea, French Polynesia, with the support of the Planetary Eel project (ERC Synergy Grant 2025), in which CRIOBE researchers are involved.

Experimental work will be conducted at the CERM-UVic facilities (temperate species) and at the CRIOBE experimental station in Moorea (tropical species). Omics analyses will be performed at UPVD analytic platforms.
The PhD project integrates complementary expertise in ecology, behavioral analysis, metabolomics (LC-HRMS and NMR), and transcriptomics. Omics analyses will provide insights into the physiological responses of glass eels to temperature warming, while behavioral analyses will include assessments of locomotor performance, boldness, and related traits.

Available infrastructures / datasets / experimental platforms / field sites relevant to the challenge:
- Laboratori del riu: a laboratory fitted for aquatic ecology research in the Ter River Museum, managed by CERM-UVIC-UCC.
- MSXM and Bioenvironment UPVD's platforms for metabolomics and transcriptomics analyses.
- Vertebrate animal facility of UPVD, Experimental Ecology Station of CRIOBE in Moorea (belonging to the INEE Experimental Ecology Station network (https://www.inee.cnrs.fr/fr/rensee).

References of both supervisors:

Dr. Marc Ordeix i Rigo, Coordinator of the CERM-UVIC (Center for the Study of Mediterranean Rivers) – Universitat de Vic – Universitat Central de Catalunya and Pr. Nathalie Tapissier CRIOBE – UPVD (UAR3278-UPVD-CNRS-EPHE-PSL) are the two co-supervisors of the PhD.

Dr. Marc Ordeix is specialized in aquatic ecology and specially in migratory fishes, and he is the principal coordinator of Interreg POCTEFA AnguillaMed project focused on European eel.
https://www.researchgate.net/profile/Marc_Ordeix
https://orcid.org/0000-0001-7083-2396
http://mon.uvic.cat/cerm

Pr. Nathalie Tapissier is specialized in metabolomics approaches, has already supervised 3 PhD works on fish metabolome, and she is the principal coordinator of ANR grant INTERACTION focused on European eel.
https://www.researchgate.net/profile/Nathalie-Tapissier-Bontemps
https://orcid.org/my-orcid?orcid=0000-0003-2273-8498

Required Skills and Competences

University degree in: University graduate, with a master's degree or equivalent after 2010, in science studies (Biology, Environmental Sciences, Forest Engineer or similar).

English language minimum B2 level.

Experience in:
- Field work in general and in aquatic ecology, especially in migratory fish.
- Design of experiments, execution and experimental procedures, treatment and analyses of results and elaboration of reports.
- Statistical data processing.
- Scientific oral and written skills in English.
- Capacities of communication, relation and teamwork.
- Organizational capacities. Skill and responsibility to work in tight deadlines.

Other:
- Be in possession of the driving license.

WILL BE CONSIDERED:
- Naturalistic knowledge in aquatic ecology, scientific knowledge of eel species will be particularly appreciated.
- Experience in education and / or environmental awareness.
- Experience in land stewardship and / or conservation biology.
- Skills in analytical chemistry such as LC-MS and in metabolomics data processing and analyses.

- Average marks for degree programs and masters.
- National or international research stays.
- Participation in conferences and workshops.
- Knowledge of other languages (especially French and Catalan).

Master's degree(s) required or equivalent(s):
Master's in science studies: Biology, Environmental Sciences, Forest Engineer or similar.

Co-supervision partnership framework

Co-supervision (2 supervisors): Yes
Dual degree PhD (France / Spain) where applicable and approved by the relevant institutions: Yes

Indicative mobility arrangements:
Hosting institution: 24 months (CERM-UVic)
Co-hosting institution secondment: 9 months (CRIOBE-UPVD)
Non-Academic secondment: 3 months (MRM*)

(*) The French NGO "Migrateurs Rhône Méditerranée, MRM" is interested to be involved in the project. The results of our experiments will be of great interest to improve their management framework and the PhD hosting could also be an opportunity to add another temperate experimental site in the Camargue delta (French Mediterranean).

Work conditions

Duration: 36 months
Indicative start date: October 2027

Indicative gross salary:
~ €2,450/month + Statutory end-of-contract compensation in accordance with Spanish legislation estimated at ~ €80/months accrued during the contract and paid at the end of the contract. Estimated total annual gross salary: 30.600€
Eligible fellows with one or more dependent children may receive an additional family allowance of €50 per month.

Trainings:
- Laboratory animal science course
- Ethical Requirements for the Doctoral Thesis and Professional Activity
- Open Science Course of the Catalan Universities
- Tools for incorporating a gender perspective into your doctoral thesis
- How to present the Research and Training Plan

Mobility required: yes **Non-academic secondment**: yes **Dual degree / Cotutelle possible**: yes **Doctoral tuition fees and Visa fees:** fully covered by TERRA-MED program **Social security:** Full employer contributions covered by the recruiting entity.	
Host institution	**Co-host institution**
The Universitat de Vic – Universitat Central de Catalunya (**UVic-UCC**), owned by the Fundació Universitària Balmes, was officially recognized in 1997 and offers around 42 bachelor's degrees, 18 master's degrees and 10 doctoral programmes. With 25 recognized research groups and 6 research and knowledge-transfer centers, UVic-UCC combines a strong research focus with an international outlook. For PhD students and researchers, its close and multidisciplinary environment offers opportunities for collaboration with established research groups, participation in European and international projects, mobility and networking. https://www.uvic.cat/en The Center for the Study of Mediterranean Rivers (CERM) is a research center of UVic-UCC. It is part of the Aquatic ecology Group of UVic, and it is also the environmental area of the Ter River Museum, based in Manlleu (Osona). The CERM-UVic-UCC carries out activities of scientific research and knowledge transfer, environmental education and scientific dissemination, conservation and ecological restoration of rivers and other aquatic environments and supporting the development of the Ter River Museum as a natural sciences museum. It specializes in the ecological status and biodiversity assessment of aquatic environments and in ecological restoration projects, especially using biological indicators, such as riparian vegetation, aquatic macroinvertebrates and fish. https://www.uvic.cat/en/research/centre/study-of-mediterranean-rivers	CRIOBE – UPVD: Centre de Recherches Insulaires et Observatoire de l'Environnement (UAR3278- UPVD-CNRS-EPHE-PSL) is a Research Support Unit affiliated to École Pratique des Hautes Études (EPHE), University of Perpignan Via Domitia (UPVD), and the French National Center for Scientific Research (CNRS). It is located in Perpignan and French Polynesia and also has a representative office in Paris. Its members are committed to promote research, education, and services related to the ecological, biological, chemical, physiological, genetic, social, and cultural dimensions of coral reefs. https://www.criobe.pf/en/home/

Eligibility conditions

***Horizon Europe MSCA Mobility Rule*:** Researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of the host organization (France or Spain depending on the employing institution) for more than 12 months in the 36 months immediately before the recruitment date – unless as part of a compulsory national service or a procedure for obtaining refugee status under the Geneva Convention.

***Horizon Europe MSCA Eligibility Criteria*:** Applicants must be eligible for enrolment in a doctoral programme at the employer institution and must not already hold a doctoral degree at the date of recruitment.

Applicants who do not fulfill the Mobility Rule and the Eligibility Criteria WILL NOT be considered for the research position.

***Language requirements*:** Applicants must demonstrate sufficient proficiency (B2) in English to successfully conduct doctoral research and participate in the TERRA-MED training programme.

For more information on this call for candidates see our website here and the guide for applicants here.

APPLY HERE BY Decembre 31st 2026

Administrative Contact

TERRA-MED Programme Office (only for general administrative questions and redress demands. Any research-related question must be addressed to the supervisors by email, see second page)

Email: terramed@euroregio-epm.eu