Post-doctoral grant offer

Developing an unified model of ecosystem restoration in quarries targeting biodiversity, ecosystem services, C-Sink

WORKING ENVIRONMENT

You will be welcomed in the Biodiversity and Landscape research unit (BP) (Gembloux Agro-Bio tech, Liège University) which brings together, about 30 scientists, including 5 permanent staff. BP unit research activities include biodiversity conservation and restoration, impact of human activities on ecosystems and landscapes, providing solutions for attenuation and adaptation to global change including climate change.

You will be supervised by Grégory Mahy (Orcid : 0000-0003-3094-8620, full list of publications : https://orbi.uliege.be/profile?uid=p079710) and Jean-François Bastin (Orcid : 0000-0003-2602-724, full list of publications : https://orbi.uliege.be/profile?uid=p129525). You will work in close collaboration with a core European expert group in quarry biodiversity restoration and will benefit from access to a large network of experts gained from previous projects of the BP team.

JOB MISSIONS AND ACTIVITIES

The position is part of the H2020 project ROTATE -strengthening the mining manufacture sector by developing new environmental solutions focused on the open cast mining operations. The Postdoc position is linked to the specific objective : To enhance site rehabilitation and biodiversity management for open cast mining site

The tasks of the postdoc target specifically the contribution of ecosystem restoration in quarries for biodiversity, ecosystem services and in particular C-sink. The postdoc tasks target the development of an unified model with specific toolboxes for quarries : 1) an unified intuitive indicators set and monitoring procedures according to the SMART framework to measure biodiversity, ecosystem services, C Sink; 2) a synthetic toolbox on biodiversity management and restoration actions across EU Biogeographical regions targeting their main N2000 habitats and species with associated ecosystem services trade off, 3) an operational toolbox with decision instruments for restoring C-sinks in line with biodiversity restoration challenges The model should be implemented in a digital module which allows the upscaling at the European level of the main solutions to improve biodiversity, C-sink potential and Ecosystem services in quarries.

You will be in charge of :

Scientific tasks :

- Providing a synthesis of existing knowledge based on review of literature on restoration in European quarries and knowledge from an european expert group in quarries ecological restoration.
- Upscaling at European level the outcomes of local cases : Collecting biological and environmental monitoring datasets on restoration projects in quarries across Europe - Defining relevant metrics to assess the ecological effects of restoration operations - Analysing the relationships between the characteristics of the spatiotemporal context of restored sites and the taxonomic and functional responses of biodiversity, ecosystem services and C:sinks. This upscaling will be done linking field, proxy sensing and remote sensing data.
- Developing innovative research to link biodiversity and C-sink (including the 5 pools of C) resulting from restoration actions, for different stage of the restoration process and for a subset of relevant and representative ecosystems of different European biomes;
- Developing the unified model and contributing to the development of the digital platform.
- Developing toolboxes.
- Publishing review, synthesis and original research papers.

**Project management**
- Being in close relationships with other partner of the ROTATE project in the environmental work package
- Scientific reporting to the work-package leader
- Assisting meetings of the work package partners and project consortium.
- In collaboration with the project supervisors, you will co-promote Master Thesis on specific items of the project.

**QUALIFICATIONS/SKILLS/EDUCATION & RESEARCH REQUIREMENTS**

- Recommended training: PhD in ecology, environmental sciences, or data sciences applied to ecology
- Expected experience / knowledge: Biodiversity and Ecology in European continental terrestrial environments; Data analysis and modelling in Python, R, Javascript (Google Earth Engine); GIS skills, remote sensing skills.
- Appreciated experience / potential assets: Restoration ecology; Inter- and/or transdisciplinary work; UAVs pilot license
- Sought skills: Teamwork; Management skills, Solution oriented for stakeholders, Oral communication in English and French (direct working environment).

**OFFER**

We offer a long term post-doc research position (preferentially full-time) with full social security coverage for a maximum of 36 months, depending on the starting date and experience. Net monthly salary will be around 2500 €, precise amount depending on country of origin and experience. Up to 25 days of annual leave. Access to ULiege training program.

**APPLICATION**

Applicants must email (in a single document) a CV, a statement of interest, a letter of recommendation and contact details for 2-3 relevant references at g.mahy@uliege.be before 31/07/2022. Additional information can be obtained by contacting G. Mahy : g.mahy@uliege.be

Best starting date : 01/09/2022.

**JOB LOCATION**

- Gembloux Agro-Bio Tech at Gembloux (Belgium). Gembloux is a small cozy city situated in rural Belgian Landscapes, close to Namur ( Walloon Region capital city), 30 km south of Brussels, with easy access by train, 20 minutes from Brussels south airport.
- Mainly computer work and Professional travel in Europe for meetings, field works and workshops.
- Part time home working policy.