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1-year research project

**Population models to improve ecological risk assessment of nickel**

 Project description:

Environmental risk assessment and the setting of water quality criteria for metals such as nickel are based on species sensitivity distributions (SSD). Despite its merits, this method also has considerable limitations, among others its low ecological realism (no species interactions, laboratory conditions) and the inclusion of a wide range of biological effects (survival, growth, reproduction). It is however unclear how these effects translate to actual effects of populations in field conditions and in a community context. Regulatory authorities have named ecological modelling as one of the most-promising alternatives to improve environmental risk assessment. Building on recently published work, the current project aims to further develop population models for water fleas and aquatic snails to predict population dynamics under nickel exposure. The ecological realism of these models will be evaluated using observed population dynamics from a long-term, large-scale community-level experiment (a mesocosm) by integrating the population models with an existing ecosystem model. Our research in this project, through close collaboration with different stakeholders, will ultimately find its application in improving ecological risk assessment and environmental policy.

Your profile:

We are looking for a motivated researcher with great interest or good knowledge in at least one of the following: (i) Ecology/Environmental science, (ii) Ecotoxicology, (iii) Ecological modeling. The project is exclusively about population/ecosystem modeling, including developing, calibrating and validating models using existing (literature) data. Thus, considerable interest and demonstrable skills in coding (e.g., R, MATLAB, Python…) are a prerequisite. The project is a collaboration between UGent (prof. K. De Schamphelaere, [www.ecotox.ugent.be](http://www.ecotox.ugent.be)) and Arche Consulting (Dr. P. Van Sprang, Dr. K. Viaene, [www.arche-consulting.be](http://www.arche-consulting.be)). Candidates should have (or almost have) an MSc. Diploma in a field related to the project (Environmental science, Ecology, (Bio)engineering, …) and should also have a good command of English. We are not looking for postdoctoral researchers for this research.

We offer: the possibility to work for 1 year with a dynamic group of ecotoxicologists/ecological modelers, develop relevant expertise in the area of population/ecosystem modeling in ecotoxicology, potentially as a stepping-stone for a longer-term PhD project in our group.

How to apply:

Please send an E-mail before 15 June 2018 to Karel.Deschamphelaere@ugent.be with a single attachment, containing a brief (maximum half a page) motivation letter, your curriculum, a copy of your diploma, overview of courses followed and study results. Do not hesitate to apply, as applications may close as soon as a suitable candidate has been identified.