

A 4-year PhD position at University of Helsinki in resurrection ecology:

Reconstructing past responses of *Eubosmina maritima* to anthropogenic environmental changes using the historical archives of the Baltic Sea sediment

A powerful way to reconstruct past responses of populations to human-induced environmental changes is to use the information hidden in the sediment in the form of dormant eggs and microfossils. We investigate how and why the cladoceran zooplankton community has changed in response to human-induced environmental change during the last century, using resurrection ecology, paleolimnology and paleogenomics.



The PhD project will involve reconstructing past responses of *Eubosmina maritima* to human-induced changes of the Baltic Sea, particularly to eutrophication and changes in the fish fauna. Recorded phenotypic changes will be related to environmental changes to determine whether the population has been able to track changes in the environment. Reaction norm experiments will be performed to investigate the degree of plasticity and the limits of responses. The work will be complemented with genomic work carried out within the research group. This will allow us to determine the genetic underpinning of the phenotypic changes. A detailed research plans will be developed and tailored to match your individual interests and strengths. The work is done in collaboration with the research groups of prof. Dieter Ebert at University of Basel and Dr Luisa Orsini at University of Birmingham. English is the working language.

Your role: Your work will include the retrieval and hatching of dormant eggs of *E. maritima* from dated sediments of the Baltic Sea, the cultivation of clonal lineages from these resurrected eggs, and the performance of reaction norm experiments using the clonal lineages, to determine their responses to blooms of toxic cyanobacteria. In addition, microfossils will be measured to record phenotypic changes across time. Depending on your interests and strengths, you can contribute to the genomic work. You will work in close collaboration with two post-docs within the group, and participate in the supervision of undergraduate students and assistants.

Qualifications: You will have a Masters or equivalent degree in ecology or evolutionary biology (or related fields), and a strong interest in the research questions and a high motivation to pursue a PhD. Excellent written and oral communication skills in English are required, as are the ability to work efficiently, independently as well as in collaboration.

We offer: The salary will follow the demands level chart for teaching and research personnel in the salary system of Finnish universities, with a salary component based on personal performance. All standard pension benefits and occupational health care are provided for university employees. For information on the University of Helsinki, please visit: <http://www.helsinki.fi/university/index.html>

Starting date: 1st of September 2014 or as agreed on.

To apply: Consideration of applications will begin on 15th of June 2014, and will remain open until filled. Please send your application with (1) a statement of research interests and why you have applied for this position, (2) your CV, (3) an authorized copy of your MSc degree (if available at time of application, and (4) contact details of two references to Dr Ulrika Candolin at ulrika.candolin@helsinki.fi

Feel free to address informal inquiries to:

Ulrika Candolin

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<http://www.mv.helsinki.fi/home/ucandoli>