We are looking for a PhD student to contribute to our research program investigating the links between ecological and evolutionary processes in changing environments.

A major goal in biodiversity conservation is to predict responses of biological populations to environmental change. To achieve this goal, we search for early warning signals of sudden population declines. Some studies have achieved phenomenological prediction of such changes, but recent advances that link ecological and evolutionary processes hint that a mechanistic understanding is within reach. In this research, we investigate how microcosm populations respond demographically and phenotypically to environmental change and search for the early warning signals of ecological and evolutionary responses.

To this end, the PhD student will take the lead on designing and carrying out experimental tests of theory, using small-scale microcosm experiments with protists and rotifers. Throughout the PhD degree, the student will work with advanced statistical models to investigate nonlinear relationships between traits and life history rates, and with trait-based population models to investigate the links between phenotypic trait and population dynamics.

Qualifications:

- MSc degree (or equivalent) in population ecology, evolutionary biology, biostatistics, or a relevant field.
- Knowledge of and demonstrated interest in eco-evolutionary dynamics in changing environments.
- Ability to work independently as well as strong interpersonal, written and verbal communication skills.
- Strong quantitative skills, proficiency in statistical analysis and/or demographic modelling in R or MATLAB.

We offer a 3-year PhD position in a dynamic research environment, where you will be an active member of the Population Ecology Research Group at the Institute of Evolutionary Biology and Environmental Studies, University of Zurich and have ample opportunity to collaborate with a vibrant and international network of ecologists, biostatisticians and evolutionary biologists. Salary will be based on the guidelines of the Swiss National Science Foundation. For more information, please contact

Arpat Ozgul
or visit
www.popecol.org
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Screening of applicants will start on **March 23rd, 2015** and continue until the position is filled. Please send the following application material in a single PDF file to
arpat.ozgul@ieu.uzh.ch
:

- Cover letter explaining your motivation and expectations
- CV, including any publications
- One page summary of your MSc degree
- Contact information for two references

Relevant references:

- Boettiger C, Hastings A (2013) Tipping points: From patterns to predictions. *Nature*.
- Smallegange IM, Coulson T (2012) Towards a general, population-level understanding of eco-evolutionary change. *TREE*.
- Ozgul A, Coulson T, Reynolds A, Cameron T, Benton TG (2012) Population responses to perturbations: the importance of trait-based analysis illustrated through a microcosm experiment. *American Naturalist.*
- Ozgul A, Childs DZ, Oli MK, Armitage KB, Blumstein DT, Olson LE, Tuljapurkar S, Coulson T (2010) Coupled dynamics of body mass and population growth in response to environmental change. *Nature.*