HUMBOLDT-UNIVERSITÄT ZU BERLIN

The Geography Department at Humboldt-Universität zu Berlin seeks highly qualified and motivated candidates for

Three PhD and Postdoc positions (3 years) in avian biodiversity modelling and global change ecology

1. PhD in modelling species interactions (TV-L HU 13, 65%): Reference number *DR/013/18*
2. PhD in modelling range dynamics (TV-L HU 13, 65%): Reference number *DR/014/18*
3. Postdoc in dispersal modelling (TV-L HU 13, 100%): Reference number *DR/015/18*

starting from 1st April 2018. We also welcome inquiries from prospective applicants for a Marie Skłodowska-Curie fellowship (2018).

Successful applicants will join the newly established **Biodiversity Modelling lab** headed by Dr. Damaris Zurell (https://damariszurell.github.io) and will contribute to the DFG-funded Emmy Noether research project "BIOPIC – Disentangling the effects of demography, dispersal and biotic interactions on population and community response to global change". The project aims at improving the scientific basis for model-based biodiversity assessments and increasing reliability of biodiversity predictions for broad spatial scales. Together, we will develop an integrated modelling framework able to disentangle the complex roles of demography, dispersal and biotic interactions in shaping species niches, and assess their effects on population and community response to global change. The framework and its single components will be validated using a mix of simulated and empirical data, and it will be operationalized for **avian communities**.

Position 1 – PhD in modelling species interactions (Reference number ***DR/013/18***): to work on improving our understanding how biotic interactions shape species' niches. The PhD candidate will mainly work with joint species distribution models (JSDMs). Using empirical data, you will test spatial scale dependence of JSDMs as well as spatiotemporal variation in species interactions. You will also implement dynamic models of multi-species interactions to test the ability of JSDMs to detect interspecific interactions from co-occurrence and co-abundance as well as trait data.

Position 2 – PhD in modelling range dynamics (Reference number ***DR/014/18***): to work on improving our understanding how life history and demography shape species' niches. The PhD candidate will implement a generic framework for dynamic distribution modelling to predict spatial distribution of species as well as local population dynamics. A key component will be to develop workflows for identifying and modelling key life stages in birds and other animals, and for assigning stage-specific demographic response functions in the dynamic modelling framework.

Position 3 – Postdoc in dispersal modelling (Reference number ***DR/015/18***): to work on improving our understanding how life history and individual variation shape dispersal. The postdoc will be responsible for obtaining and processing ring recovery data for European breeding birds, for conducting meta-analyses on dispersal and demographic data across Europe, for building (natal and breeding) dispersal kernels and assessing spatial and functional variation in dispersal.

Candidates should have an above average MSc (positions 1-2) or PhD degree (position 3) in a relevant field (ecology, geoecology, geography), be highly self-motivated and able to work in a dynamic team. We expect strong quantitative skills in statistics and computer modelling (R, C++), and previous experience in analyses of large biodiversity data sets and spatial data analyses. Background in biodiversity theory, avian ecology, species distribution modelling, Bayesian statistics, population modelling, individual-based modelling and/or ecological network analysis as well as experience with high performance clusters is advantageous. Candidates should also show strong writing and verbal communication skills. We expect successful candidates to write scientific papers on the project in internationally peer-reviewed journals, and to present the research at national and international meetings. Working language is English.

We offer a position in an international, young and dynamic team. Payment will be according to EGr. 13 TV-L HU with a gross salary of about 28,000-33,000 EUR for a PhD position (65%) and 44,000-51,000 for a Postdoc position (100%), depending on prior research experience. Funding for participation in scientific conferences and relevant workshops is available. Humboldt-Universität zu Berlin is located in the Berlin-Brandenburg research area and closely linked to neighbouring institutions like the Potsdam Institute for Climate Impact Research (PIK). HU Berlin hosts one of Germany's leading Geography Departments, with research foci in Land System Science, Global Change Research, and Metropolitan Studies. Within the project, strong collaboration is foreseen with other leading national and international researchers (https://damariszurell.github.io/project/biopic/).

Application details: Please send your complete application including the reference number, a letter of motivation, full CV, publication list, and contact details for two references electronically and in a single PDF file to Dr. Damaris Zurell (damaris.zurell@hu-berlin.de). The reference number must be included in the subject line of your email. Please visit our website www.hu-berlin.de/stellenangebote for access to the legally binding German version.

Application deadline: 22nd February 2018. For further information please contact Dr. Damaris Zurell (damaris.zurell@hu-berlin.de).

Further reading:

Warton DI et al. (2015) So Many Variables: Joint Modeling in Community Ecology. Trends in Ecology & Evolution 30: 766-779.

Zurell D et al. (2016) Benchmarking novel approaches for modelling species range dynamics. Global Change Biology 22: 2651-2264.

Zurell D (2017) Integrating demography, dispersal and interspecific interactions into bird distribution models. Journal of Avian Biology 48: 1505-1516.