



Data Request Form

To obtain data from the European Vegetation Archive (EVA), please first make an enquiry to the EVA database administrator Ilona Knollová (ikuzel@sci.muni.cz) whether the data meeting your needs are available. If they are, please fill in the form below and submit it to Ilona or another member of the EVA Coordinating Board.

- Applicant's name:

Brian Leung¹, Laura Pollock¹, Abbie Jones¹

- Applicant's institutional address:

¹Department of Biology, McGill University, 1205 avenue Docteur Penfield, Montréal, Québec, Canada.

- Applicant's e-mail:

brian.leung2@mcgill.ca

- Project title:

Creating comprehensive bias-corrected distributional estimates of the European floral biodiversity

- Brief description of aims and methods of the study:

Our project aims to build a comprehensive set of species distribution models (SDMs) for all plant species with a minimum amount of data present in Europe, by integrating presence-absence vegetation plot survey data available from EVA with presence-only GBIF sightings data, and building “bias-adjustment kernels” weighing both species- and spatially-driven biases to adjust projections accordingly. While this is a very ambitious endeavor, our model (S2BaK) has previously been successfully applied to the neotropics, where the distributions of >6000 plant species in Panama were estimated with improved predictive power in comparison to presence-only or survey-only models (Leung et al., 2019). Building from that work, we want to expand the use of our integrative models to larger scales and greater complexities associated with Europe. Most importantly, the methodology involved in building integrative estimates and “bias-adjustment kernels” can permit us to address and systematically correct for pervasive locational biases often present in large-scale databases, yielding improved predictions. Additionally, with this approach, the distribution of plant species that have not been surveyed can also be estimated with accuracy (Leung et al., 2019). Overall, this work will provide a base-line plant biodiversity layer for Europe, adjusting for spatial and taxonomic biases, which will provide a key tool for researchers interested in fundamental or applied ecological questions (e.g., regarding plant distributions on varying geographic scales and for estimating any future losses in biodiversity and ecosystem services resulting from anthropogenic effects, such as land-use changes and developments or the spread of invasive species).

- Will someone else be involved in data editing or analysis in addition to the applicant?



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Data editing and analysis will be performed by graduate student Abbie Gail Jones at McGill University under the lead and supervision of Dr. Leung and Dr. Pollock. Dr Milan Chytry will provide expertise and insight into the data sources and analyses.

- Estimated time of delivery of results (e.g. manuscript submission):

2021, or 24 months.

- Geographic area needed (e.g. countries or range of geographic coordinates):

All European countries (excluding Anatolia regions of Turkey, Asian Russia, Cyprus, Georgia, Armenia, Azerbaijan, & Kazakhstan).

- Do you need plots to be georeferenced? If so, what is the minimum accuracy of plot location (in metres or kilometres) needed for your project?

Yes, utilized plots will require geographic coordinates preferably at a minimum accuracy of ~10 km.

- Vegetation types needed (syntaxa):

All terrestrial vegetation.

- Other data selection criteria:

N/A

- Envisaged publications:

We envision at least two major peer-reviewed publications from this work, the first being a methodological publication regarding large-scale applications of integrated single species distribution models and bias kernels using plant biodiversity in Europe as our study system. This will enable an additional paper focused on the applied uses of the model in identifying plant biodiversity hotspots (i.e. and their overlap with invasive species hotspots and zones of land-use change and planned developments).

- Plant trait data from the TRY consortium. If you plan to combine your analysis of vegetation-plot data with plant trait data, you can also request for a dataset of 18 gap-filled traits for a large number of plant taxa prepared by the TRY consortium. These traits include Leaf area, Specific leaf area, Leaf fresh mass, Leaf dry matter content, Leaf C, Leaf N, Leaf P, Leaf N per area, Leaf N:P ratio, Leaf delta15N, Seed mass, Seed length, Seed number per reproductive unit, Dispersal unit length, Plant height, Stem specific density, Stem conduit density, and Conduit element length. This dataset can be provided to you from the EVA manager together with the vegetation-plot data. If you use this dataset, you must inform about your project the TRY data contributors who might be potentially interested and invite them as potential co-authors, assuming they will make an intellectual contribution to your paper. The list of the TRY data contributors will be sent to you together with the gap-filled trait dataset.

No

- Specification of the co-authorship arrangements in publications based on the requested data. Note that the EVA Rules recommend that co-authorship is offered to a representative of each database providing data that are particularly important for the project (e.g. unique vegetation types, under-represented geographic areas) or make up more than 10% of the final dataset (5% threshold can be



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considered too). These database representatives should be experts in the topic of the project (they do not need to be the custodians or deputy custodians) and they should contribute to the project more than just by providing the existing data, e.g. by intellectual contribution to the concept of the paper, preparation of new data, or helping with data analysis, interpretation of the results or writing parts of the paper (see the IAVS Code of Professional Ethics: <http://iavs.org/Governance/Code-of-Professional-Ethics.aspx>). The project leader should enable active participation by regularly informing potential co-authors about the progress of the project from its early stage. The project leader should also make final co-authorship arrangements based on the real input of the individual contributors.

Abbie Gail Jones will be the lead author of publications, and will be directly supervised by Brian Leung, and Laura Pollock. Milan Chytrý will provide guidance and expertise on nuances inherent in the EVA data.

Custodians or other database representatives that contributed at least 10% of the data utilized in the final dataset or who have contributed data particularly important for the project's findings or those who have some expertise in the topic and agree to further participate in the project via intellectual contributions to the concept of the paper(s), in writing, or in interpretation of results may opt-in for co-authorship by contacting the Brian Leung and specifying potential contribution to the project. Co-authorship will be further negotiated on a case-by-case basis.

- Eligibility of the applicant to receive EVA data. Specify to which EVA database the applicant has contributed; if the applicant is not the custodian or deputy custodian of an EVA database, give a name of a custodian or deputy custodian who supports this data request.

Milan Chytrý supports this data request

I agree with the terms of EVA Data Property and Governance Rules as approved on 26 May 2012 (<http://euroveg.org/download/eva-rules.pdf>).

If I ask for the plant trait data from TRY, I agree to invite to my project the TRY data contributors following the list received from the EVA database manager.

Montreal, Canada, November 8, 2019

Brian Leung

Associate Professor
UNESCO Chair for Dialogues on Sustainability
Director of the McGill-STRI Neotropical Environment Option
Department of Biology and the McGill School of Environment
McGill University