



European Vegetation Archive Data Request Form



To obtain data from the European Vegetation Archive (EVA), including the ReSurveyEurope Database, please first enquire the EVA database administrator Ilona Knollová (ikuzel@sci.muni.cz) whether the data that meet 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 (or ReSurveyEurope Board if you ask for data from the ReSurveyEurope Database).

- Applicant's name:

Victor Boussange, Johanna Teresa Malle, Gabriele Midolo, Dirk Nikolaus Karger

- Applicant's institutional address:

- Swiss Federal Institute for Forest, Snow, and Landscape Research WSL, Birmensdorf, Switzerland (Victor Boussange, Johanna Teresa Malle and Dirk Nikolaus Karger)
- Department of Botany and Zoology, Masaryk University, Brno, Czech Republic (Gabriele Midolo)

- Applicant's e-mail:

victor.boussange@usys.ethz.ch; johanna.malle@slf.ch; gmidolo@sci.muni.cz;
dirk.karger@wsl.ch

- Project title:

Species-area environmental relationships based on machine learning

- Are you asking for core EVA data (non-repeated vegetation surveys) or for ReSurveyEurope data (repeated vegetation surveys)?

Core EVA data (non-repeated vegetation surveys).

- Brief description of the aims and methods of the study:

Species-area relationships (SARs) are a common attribute of all organismic groups and are one of the few patterns that are general in ecology. SARs can be described in part by a simple mathematical sampling effect but they also depend on the environment that is sampled. However, space and environment have hardly been looked at together. Here we account for the effect of environmental conditions on SARs of European vascular plants using vegetation plots together with environmental data from a land surface model. We parameterize the environmental part with machine learning for different habitat types (grasslands, forests, scrubs and wetlands) separately. We check for the importance of each climatic variable per habitat type. Our project aims to 1) present a methodological advancement on how machine learning supports the parameterization of SARs based on environmental conditions; and 2) to model vascular plants species richness in European vegetation by identifying most relevant bioclimatic drivers affecting SARs.

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



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Potentially also other data managers and data analysts from the Swiss Federal Institute for Forest, Snow, and Landscape Research WSL and Department of Botany and Zoology, Masaryk University.

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

By the end of 2023.

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

Europe (excluding Anatolia, Russia, Georgia, Armenia, Azerbaijan, Cyprus and Macaronesia).

- 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?

Plots need to be georeferenced, including those with high uncertainty.

- Vegetation types needed (syntaxa):

Vegetation plots categorised either as forests, grasslands, scrub or wetland (= level 1 of the the EUNIS habitat classification system; Chytrý et al. 2020 <https://doi.org/10.1111/avsc.12519>).

- Other data selection criteria:

We need vegetation plots with recorded plot size (= relevé area).

- Envisaged publications:

One or two scientific articles in international journals focused on biogeography or macroecology.

- **Data deposition.** Some journals require data used for the analysis to be stored in a public repository to ensure the repeatability of the analysis. According to EVA Rules, you are not allowed to store the original vegetation-plot data obtained from EVA. However, if you plan to publish in such a journal, you may deposit a reduced EVA-derived dataset that (1) would make it possible to repeat the analysis published in the paper and (2) does not contain any information not used in the analysis. For example, such a dataset can contain only a subset of species (e.g., only angiosperms or only neophytes), or replace species names with codes, or replace species cover values with presences/absences, or remove all the header data, or replace the exact plot coordinates by coarse grid-cell coordinates etc. If you plan to deposit reduced information from vegetation plots, please describe here what might be deposited. If the project developed so that you needed to deposit more information than specified here, you would need to ask specific permission from the Custodians of the EVA databases used in your analysis before the dataset is deposited.

We will not store the original relevé data. Only minimum information or derived data that will not make it possible to reconstruct the original relevé data can be stored if the target journal requires it.

- **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 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,



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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 by 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., a relatively large proportion of the final dataset used in the analyses or data from unique vegetation types or under-represented geographic areas). This database representative should be an expert in the topic of the project (not necessarily the custodian or deputy custodian), and this person 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.

One representative of each EVA database (custodian or a person delegated by the custodian) will be considered as a co-author provided the custodian expresses interest in this project by filling in the EVA online form and the database provides > 2% of the final number of plots or fewer data from biogeographically important regions that are not represented in other databases. Co-authors will be asked to provide intellectual input in the interpretation of the results and commenting on the manuscript. All the other data contributors (custodians) of EVA will be acknowledged in the resulting publication.

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

This data request is supported by Milan Chytrý, the Custodian of the Czech National Phytosociological Database (EU-CZ-001).

- 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 ReSurveyEurope data, I agree with the terms of ReSurveyEurope Data Property and Governance Rules as approved on 6 April 2022 (<http://euroveg.org/download/resurveyeurope-rules.pdf>).
- In any result obtained based on EVA core data (non-repeated vegetation surveys), I will cite the EVA report article (Chytrý et al. 2016; <https://doi.org/10.1111/avsc.12191>). In any result obtained based on the ReSurveyEurope data (repeated vegetation surveys), I will cite the ReSurveyEurope report article as soon as it is published. In addition, I will cite individual source databases used in my project (if possible, in the list of References; if not possible, at least as a list of databases in the electronic supplementary material).



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- 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.

Birmensdorf (Switzerland)
24/01/2023

Victor Boussange, Johanna Teresa Malle, Gabriele Midolo and Dirk Nikolaus Karger